STATISTICAL SURVEY

OF THE

COUNTY

OF

LONDONDERRY,

WITH

OBSERVATIONS

ON

THE MEANS OF IMPROVEMENT;

DRAWN UP

FOR THE CONSIDERATION, AND UNDER THE DIRECTION

OF

The Dublin Society.

BY THE

REV. G. VAUGHAN SAMPSON, A. B. M. R. I. A.

RECTOR OF AGHANLOO, IN THE DIOCESE OF DERRY.

Nam sine ludicris artibus, atque etiam sine causidicis, olim satis felices fuere, futuræque sunt urbes. At sine AGRICULTORIBUS, nec consistere mortales, nec ali posse manifestum est; quo magis prodigii simile est, quod accidit, ut res corporibus nostris vitæque utilitati maxime convenientes minimam, *usque in hoc tempus*, consummationem haberent; idque speraretur genus amplificandi retinendique patrimonii, quod omni crimine caret.

COLUMELLA de re rustica.

Dublin.

PRINTED BY GRAISBERRY AND CAMPBELL,

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1802.

TO THE READER.

This REPORT *is at present printed and circulated for the purpose merely of procuring further information, respecting the state and husbandry of this district, and of enabling every one interested in the welfare of this country, to examine it fully, and contribute his mite to its improvement.*

The Society do not deem themselves pledged to any opinion given by the Author of this Survey; and they desire, that nothing contained in it be considered as their sentiments; they have only published it, as the report of the gentleman, whose name is affixed, and they publish it for the comments and observations of all persons, which they entreat to be given freely, and without reserve.

It is therefore requested, that the observations on reading this work may be returned to the Dublin Society, as soon as may be convenient, and which will meet with the fullest attention in a future edition.

DEDICATION.

INSCRIBING this Work to General Vallancey, I may be accused, not of flattery, but of presumption.—What could an Ecclesiatic gain, by adulating a General in private life? But, if that General be a bright example of erudition, there is certainly some risque in presenting so unworthy an offering.

BE this as it may, I am not in the habit of flattering the powerful; but to General Vallancey I feel myself indebted for much politeness; and to that Aristocracy, in which the General holds a distinguished rank—the Aristocracy of Talent and Learning—I should take pleasure in paying my humble tribute of respect, even though I felt no personal obligation.

I remain,

With sincere esteem for General Vallancey,

His obedient and obliged,

G. V. SAMPSON.

Dublin, Aug. 16th, 1802.

TO THE READER.

After the proceeding in this work had been decided on, little time remained for correcting, and ſtill leſs for transcribing; however disadvantageous this to the Author, it is certainly to the credit of the Printer, that from a first copy, or rather the mere notes for a copy, so few mistakes have been made.

Before the reading of the work, you are requeſted to correct the following errata.

Page	Line	for	read
5	15	four	three.
16	13	there	these.
24	4	the acid	an acid.
Do.	9	decompo-sition	description.
26	10	demesne at Boom-hall	demesne At Boom-hall.
29	1	loames	hoames.
Do.	3	Drumcool	Drumcovit.
36	9	great	greatly.
39	26	spral	sprat.
42	16	connected	capped.
43	7	south	sliabh.
44	7	turning	burning.
49	14	Sliabh bwes	Sliabh buidhe.
52	6	Tamlaght-bog	Tamlaght-beg.
54	15	Hagley	Hazely.
Do.	20	Downhill	Dunmull.
—	21	Clogfin	Cloyfin.
—	23	Mc. Ilher-ron	Mc. Ilcer-van
57	3	Altahackel	Altahacket
60	15	Burntollogh	upper Burn-tollogh.
62	11	formed	named.
68	2	fort	foot.
72	7	scum	seam.
85	20	land	sand.
87	10	land	sand.
90	19	loam	seam.
103	10	compass	needle.
104	24	Imola	Myola.
105	17	Silica and	Silica in.
—	21	earth	both.
108	11	quartz	quality.
—	18	slip	dip.
—	20	galetenous	gelatenous.
119	22	Frothail	Feobhail.
121	11	of	if
125	20	where	which
138	10	district	driest.
Do.	15	mother	mother.
139	26	Mr. C—	Mr. Church.
149	21	formed	farmed.
151	16	Mr. Boyne	Mr. Boyce.
157	5	evils	soils.
161	18	Wall	Watt.
162	10	Behen, &c.	Mr. Knox of Prehen.
167	2	Kelp droſs	lye.
Do.	do.	to this	to other composts.
172	21	possessor	reporter.
—	6	hoamed	sloamed.
Do.	do.	fallow	fallen.
—	10	he	Mr. T. Spot-tiswood.
174	23	conducts from	conducts to-wards.
178	1	in the detail	to the detail.
183	13	potatoes	particles.
—	6	three stone	four stone.
185	12	tenant	(both here and else-where) te-non.
195	21	dactylus	dactylis.
207	11	construc-tion.	contraction.
209	3	cast	cost.
210	12	40 guineas per acre.	40 guineas.
215	20	waughins	weighing.
220	2	no.	few.
221	20	2000	1000.
225	23	ring-dove	tit-lark.
240	4	the first agreement	the agree-ment.
—	11	the charter	the second charter.
—	21	Coleraine	town of Coleraine.
250	7	new im-proving	non-im-proving.
251	10	on	near.
254	18	exhausted	ecclesiastical.
257	14	church-cut 8,0,0	church-cut 0,8,0

ERRATA.

Page	*Line*	*for*	*read.*
261	12	to his lease	toties lease.
267	5	swing poſt	turning poſt.
—	10	swing poſt	turning poſt.
268	5	each, open	each other.
269	13	deep-cut	difficult.
271	8	Hagley	Hazeley
274	13	Ballymur-ran	Ballyma-cran.
277	17	fern	sorrel.
284	23	wood and water	bank and water.
287	15	no.	one.
289	3	Claudy	Garvagh, Claudy.
300	19	the old ones	the old walls.
343	26	skuttle-fish	cuttle-fish
344	10	superior	inferior
356	8	Messrs. Tenant	Messrs. Knox and Tenant.
402	2	imperceptibly.	impetuously.
410		transpose the third and fourth paragraphs.	
412	9	is a	in a
419	25	Mussunden	Mussenden.
421	20	Mr. Clinch	Mr. Church.
433	25	Ivy	Troy.
444	15	storaer	straar, (. e. a rude straddle.)
453	10	in one day	before day.
455	19	sawney	sawncey.
457	26	lame	tame.
458	4	doth	must.
461	22	Dair-calquie or Dair-coillragh	Dair-calgie or Dair-coilliagh.
462	17	Ky-cathan	Hy-cathan.
491	20	effectually	affectedly.
498	18	men fit	unfit.
		Appendix.	
1	13	Mr. M'Cool.	
—	14	experienced.	

TRANSLATION OF THE MOTTO.

"For without the arts of the Theatre, and even without the profession of the Law, States formerly have been sufficiently flourishing, and may still be so; but without AGRICULTURISTS, it is manifest that mortals can neither exist together, nor be sustained; whence it is the more like to a prodigy, which nevertheless happens, that matters above all others conducing to our bodily existence, and to the conveniencies of life, *even to this day*, should have received the least skilful accomplishment; and that the method of encreasing and retaining a patrimony should be despised, which is free from every crime."

STATISTICAL SURVE

OF THE

COUNTY OF LONDONDERRY.

CHAP. I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECT. 1. *Situation and Extent.*

THE county of Londonderry, though not inland, presents but a small portion of its boundary to the ocean. Beginning at the ruined castle of Carrick-Reagh near the bay of Port Rush, it extends along the shore to the Estuary of the Bann, which is somewhat less than four miles in a south-westward direction. From the Bann to the entrance of Lough-Foyle, contiguous to the sea, the beach winds in some parts, in a western, in other parts, in a north-western course, for the space of about seven miles. From the point of Magilligan, whose projection

forms the streight entrance of Lough-Foyle, the eastern shore of the lough, extending a little west of south, furnishes a boundary of nearly seven miles to the rivulet, which falls into Bally-macran. The shore now begins to wind south-west and by west, following which direction, about eight miles and an half, you pass the mouth of the river Fahan, and arrive opposite to the Fort of Culmore. From this streight the lough contracting its surface changes its title into that of a river. It is here also, that the natural boundary is augmented, by the accession of a territory comprized within an irregularly defined semicircle, whose centre is the market place of the city of Londonderry, and whose semidiameter, produced from that point, extends fully three miles in every direction. This semicircumference is irregular, and with all its curvings and acclivities cannot well be less than eleven miles.

Opposite to the most southern point of this semicircle, the boundary is resumed on the eastern bank of the river Foyle, and tending inland, with various curvatures, is not more accurately defined, than by the tops of mountains, and the fall of waters, until it passes through Lough Fiu to the west of Sliabh Gallan. Hence it proceeds with the stream, which issues from the lake, and passing through the demesne of Lissane, arrives at the flat country to the west of the village of Coagh. Another desertion of

the

the natural boundary occurs at this place; leaving the course of the Lissane rivulet, the line of demarcation is traced through a swampy flat, towards the Cookstown or Ballinderry river. This deviation may be accounted for, if we suppose, that through this marsh there have formerly been changes in the course of the Lissane river, and other streams which wind through this level. Henceforward, the limit is included within the Ballinderry river, till it empties itself into Lough Neagh.

If the boundary, from the bank of the Foyle to the shore of Lough Neagh, were a direct line, perhaps it would not amount to thirty-two miles; but considering its curvatures, and angles, and declivities, we must add nearly one half more, so that this outline may be computed at about forty-eight miles. Its main direction is nearly to the south-east and by east.

Lough Neagh having now become the confine, proceeds northward to the mouth of the Mayola; a distance of about four miles and an half. From the Mayola, to the commencement of the lower Bann, the direction is nearly eastward, and the distance about one mile and a quarter. The river Bann has scarcely issued from one lake, till it merges into another. The interval is apparently not more than three quarters of a mile.

The little lake (Lough-beg) presents a winding shore of not less than five miles: thence to the commencement of the liberties of Coleraine, the windings of the Bann, though not very considerable, prolonging its course about three miles, the distance may be nearly eighteen miles.

On the Antrim side of the Bann, as on the Donegal side of the Foyle, a district included by a semicircle, whose radius cannot be less than three miles, is superadded to the territory and jurisdiction of the county of Londonderry. This line of demarcation, curving very irregularly through the district east of the Bann, cannot be exactly computed. I suppose however, that from the point above-mentioned, to the shore at Carrick-Reagh, is not far from nine miles in measurement.

It appears from the above computation, that the outline of this county may be about one hundred and twenty-four Irish miles. The area is imperfectly triangular. The greatest length is between the point of Magilligan, and the Cookstown river, west of Coagh, which measures $32\frac{1}{2}$ miles in a direction from S. S. E. to N. N. W. The greatest breadth is from the Liberty-march behind sheriff's mountain, in the liberties of Londonderry, to the Vow ferry on the Bann, which may measure in a right line about $27\frac{1}{2}$ miles.

According

According to Dr. Beaufort, it lies between the latitudes of 54° 36″ and 55° 12″, and between the longitudes of 6° 18″ and 7° 21″ west.

It contains, according to the same authority, 318,500 acres, and 479 square miles; in English measurement 511,688 acres, or 798 square miles.

On the north, it is bounded by the ocean; on the west, by Lough Foyle and the county of Donegal; on the south, by the county of Tyrone; and on the east, by Lough Neagh, the river Bann, and part of the county of Antrim.

Sect. 2. *Divisions.*

In respect to the political arrangement of the kingdom, this county is in the north-western circuit.

As to internal and civil division, it is distinguished into four baronies, and one half barony, viz.

1. The barony of Tyrkerin, (anciently Anaght.)
2. The barony of Kenaght, (anciently Oiracht O'Cathan.)
3. The barony of Loughinsholin.
4. The half barony of Coleraine.

To these are added the city and liberties of Londonderry, and the town and liberties of Coleraine.

The district attached as an estate to the government of the fort of Culmore, though not within the liberties

liberties of Derry, is by a tacit consent or courtesy subject to the civil jurisdiction of the Mayor, whose authority therein has never been disputed nor opposed.

The ecclesiastical division of Londonderry, is extremely involved with that of the contiguous counties.

The county contains 31 parishes, of which 5 with 6 churches belong to the primacy of Armagh; the remainder with 23 churches to the diocese of Derry.

The diocese extends into four counties, viz. Londonderry, Donegal, Tyrone, and, for a small space opposite Ballyscullion, into that of Antrim. This last circumstance probably arose, from the convent lands of Ballyscullion having their extent to the opposite bank of the lake; the island, on which the church stood, being equally convenient to either shore.

According to Dr. Beaufort, this diocese extends, in its greatest length, 47 Irish or 60 English miles; and in its greatest breadth, 43 Irish or 54½ English miles; containing 659,000 acres, 48 parishes, 43 benefices, 51 churches, 12,921 acres to each church, 33 glebe houses, 12 parishes with glebes only, one benefice without a glebe, and one impropriate rectory.

The chapter consists of a dean, an archdeacon, and three prebendaries.

I subjoin

I subjoin a table of the benefices, which will illustrate this statement, premising, that there is a chapel of ease in the city of Londonderry, endowed by the lady of Bishop Barnard; another with perpetual cure, in Tamlaght O'Creely, erected by Lord Bristol; and a third near Lough Derg.

Between my statement and that of Dr. Beaufort the difference, in the enumeration of parishes, arises from the dissolving of episcopal unions since Dr. Beaufort published his work; these done by the present bishop are marked thus (*). It is also to be noticed, that the value given in is seldom less than one sixth under the actual income; the reason is principally, that the value has increased by new letting of the tythe, since the advance in the prices of grain.

The deanery comprises three parishes, 1. Templemore, 2. Fahanvale, and 3. Muff on the west of Lough Foyle, which last, is in the county of Donegal.

Parishes.	*Incumbents.*	*Value.*	*Payment at 1 per cent. to the Widows fund.*			*Patrons.*	*County.*	*Glebe.*	*Glebe-house.*
		£.	£.	s.	d.				
Diocese -	Earl of Bristol	7200	72	0	0	Crown	L. Derry, Donegal, Tyrone & Antrim	Parks near Derry The glebes, with	Palace.
Deanery Parishes	Dean Hume	1700	17	0	0	Crown	L. Derry & Donegal	parks near Derry	Deanery-house.
Ardstaw -	Doctor Hall	1200	12	0	0	College	Tyrone	Good glebe	Old house.
Aughanloe -	Mr. Sampson	250	2	10	0	Bishop	L. Derry	Small glebe	New house.
Badoney, lower	Mr. Wm. M'Ghee	200	2	0	0	Bishop	Tyrone	Mountainous	New house.
Aughadowey -	Mr. Sandys	550	5	10	0	Bishop	L. Derry	Middling	New house.
Badoney, upper	Mr. Nicholas Stewart	200	2	0	0	Bishop	Tyrone	None	None.
Balreagh -	Mr. Garraway	250	2	10	0	Bishop	L. Derry	Good glebe	New house.
Bovevagh -	Mr. Harvey	225	2	5	6	Bishop	L. Derry	Pretty good	New house.
Banagher and Dungiven	Mr. Blacker	500	5	0	0	Mr. Ogilvie	L. Derry	Two good glebes	None.
Ballyscullen * -	Mr. Spotswood	225	2	5	6	Bishop	L. Derry	Pretty good	Middling.
Ballyscullen * -	Mr. Fanning	200	2	0	0	Bishop	L. Derry	Lately exchanged	Going to build.
Ballynascreen -	Mr. Young	700	7	0	0	Bishop	L. Derry	Excellent	Excellent.
Culdaff -	Doctor Chichester	300	3	0	0	Lord Donegal	Donegal	Middling	Old.
Cloncaw -	Mr. Edward Chichester	500	5	0	0	Lord Donegal	Donegal	Good	Old.
Clonmany -	Mr. Hamilton	300	3	0	0	Lord Donegal	Donegal	Mountainous	None.
Camus Ban -	Mr. H. Balfour	500	5	0	0	Bishop	L. Derry	Good	Good.
Camus Horn -	Mr. Brocas	550	5	10	0	Bishop	Tyrone	Good	None.
Cappagh -	Doctor Burrows	750	7	10	0	College	Tyrone	Good	Middling.
Clonlee -	Mr. Dansel	800	8	0	0	Bishop	Donegal	Good ‡	None.
Cumber, upper *	Mr. Waddy	550	5	10	0	Bishop	L. Derry	Good	Middling.
Cumber, lower *	Mr. John Waddy	300	3	0	0	Bishop	L. Derry	Middling	New.
Desertagney -	Mr. Patterson	150	1	10	0	Lord Donegal	Donegal	Good	None.
Donagh -	Mr. Kennedy	300	3	0	0	Lord Donegal	Donegal	Middling	Middling.
Drumragh -	Doctor Stack	700	7	0	0	College	Tyrone	Excellent	Excellent.
Drumacose -	Mr. Wm. Hamilton	350	3	10	0	Bishop	L. Derry	Good	None.
Dunboe -	Archdeacon Lovel	550	5	10	0	Bishop	L. Derry	Pretty good	Middling.
Desertoghel -	Mr. Colhirst	400	4	0	0	Bishop	L. Derry	Pretty good	Bad.
Desertmartin -	Mr. M'Ghee	400	4	0	0	Bishop	L. Derry	Good	Bad.
Donaghedy -	Mr. A. Hamilton	1200	12	0	0	Marquis Abercorn	Tyrone	Excellent	Excellent.
Donaghmore -	Mr. Spence	2000	20	0	0	Spence Family	Tyrone	Excellent	Middling.
Erigle -	Mr. J. Balfour	300	3	0	0	Bishop	L. Derry	Middling	Middling.
Fahan, upper *	Mr. Hawkshaw	250	2	10	0	Bishop	Donegal	Good	Middling.
†Fahan, lower *	Mr. Cochran	225	2	5	6	Bishop	Donegal		None.
Killowen -	Mr. Hazlett	150	1	10	0	Bishop	L. Derry	Good	None.
Kilrea -	Mr. M'Causland	350	3	10	0	Bishop	L. Derry	Middling	Pretty good.
Kilcronaghan -	Mr. Bryan	380	3	16	4½	Bishop	L. Derry	Middling	Pretty good.
Lackpatrick -	Mr. Downing	550	5	10	0	Bishop	Tyrone	Good	Excellent.
Langfield, upper *	Mr. Hill	450	4	10	0	Bishop	Tyrone	Pretty good	Good.
Langfield, lower *	Mr. Gouldsbury	150	1	10	0	Bishop	Tyrone	Good	Building.
Moville, upper *	Mr. F. Gouldsbury	500	5	0	0	Bishop	Donegal	Pretty good	Good.
Moville, lower *	Mr. T. Hamilton	350	3	10	0	Bishop	Donegal	Middling	None.
Maghera -	Mr. Sodon	800	8	0	0	Bishop	L. Derry	Excellent	Bad.
Maghera, lower *	Mr. Marshall	200	2	0	0	Bishop	L. Derry	Middling	Building.
Termanamongan	Mr. Galbraith	300	3	0	0	Bishop	Tyrone	Bad	Bad.
Termantinlaggan	Mr. Bruce	650	6	10	0	Bishop	L. Derry	Excellent	Very good.
Tamlaghtard -	Mr. Torrens	300	3	0	0	Bishop	L. Derry	Not good	Middling.
Tamlaght O'Creely	Mr. Jones	650	6	10	0	Bishop	L. Derry	Good	Good.
Urney -	Mr. Fowler	800	8	0	0	Bishop	Tyrone	Excellent	Excellent.

Though the liberties of Coleraine are within the civil territory of the county, yet the ecclesiastical jurisdiction of them belongs to the see of Down and Connor, which is a further anomaly. The patronage of the parish of Coleraine is in the London Society, called, "Governor and assistants of the new plantation of Ulster," &c.

The reader will find more on this subject under the head of antiquities.

Sect. 3. *Climate.*

On this subject little need be added to the very accurate report, with which I have been favoured by my learned and liberal friend Wm. Patterson, M. D. of Londonderry. I shall only mention such observations as Dr. Patterson, on account of laborious attention to his professional duties, had it not in his power to remark.

It does not appear, that the north-west wind, which is so unfavourable to vegetable, is at all injurious to animal life. On the contrary, the greatest instances of longevity and health are found on the coast, and in Magilligan; several intances have occurred of men living from 90 to 110 years.

The neighbourhood of the western ocean, the height of the mountains which surround us on every side

side, and whose ranges intersect our county, are causes, which may account for the fall of a considerable quantity of rain. Dr. Patterson however proves, that comparatively our climate does not deserve the imputation of excessive humidity. I shall just mention the heights of some mountains, taken rather conjecturally than by any very accurate measurement.

Names.	Height.
Ben-yevenagh, (Ben-Uaimhneach) the terrifying promontory.	1250 feet above the level of the sea.
Keady, (Cedy) the hill.	1100
Donald's hill.	1200
Ben-Bradagh, (Ben-Bradach, the promontory of theft, or Ben-Bradech, the stately promontory.	1300
Sawel (Samhuil, having a resemblance ex fonte in latere muliebris pudendi habente similitudinem.	1600
Alt-Eglish (Alt-ag-lios, the glyn with the village, or court.	1300

Slieve

Names.	Height.
Slieve Gallan, Sliab-Gal-an, the mountain with the obelisk for recording the stars.	1250 feet above the level of the sea.

The following tables are communicated by Doctor Patterson.

Summary of the Ranges of Meteoric Instruments.

Years.	Barometer.		Thermometer.		Hygrometer. De Luc.		Rain Gauge.
	Max.	Min.	Max.	Min.	Max.	Min.	Inch Parts.
1795 -	30.84	28.64	74	21½	55¼	32	32.861 plus.
1796 -	30.61	28.37	71	17	56⅜	31	25.718394
1797 -	30.53	28.80	72	30	50¾	25⅟	30.821272
1798 -	30.68	28.60	74	26	44⅘	24¾	33.2310176
1799 -	30.64	28.76	74	21	47½	31	34.7709468 plus.
1800 -	30.49	28.85	81	28	52⅟₀	33⅟	29.2263628
1801 -	30.59	28.64	76	22	52⅖	26½	32.197740
Mean -	30.62+	28.66+	74+	25.7+	51.37+	29.13	31.118147

Annual

Annual Direction of the Winds.

Years.	N.	S.	E.	W.	N.W.	N. E.	S. W	S. E.
1795	21	38	26	79	109	62	83	60
1796	32	33	42	103	101	45	69	49
1797	19	51	16	98	55	29	82	50
1798	26	68	34	100	42	23	98	57
1799	49	34	34	109	67	16	70	56
1800	41	27	21	136	79	27	36	75
1801	37	46	36	141	86	23	38	29
Total	225	297	209	766	539	225	476	376

Annual

Annual Statement of various Phenomena.

Years.	*Fair.*	*Showery.*	*Wet.*	*Hail.*	*Snow.*	*Frost*	*Aurora Borealis.*	*Thunder & Lightning.*
1795	131	198	36	18	33	60	3	8
1796	148	169	49	26	18	38	4	7
1797	114	216	35	28	13	32	3	5
1798	126	207	32	22	14	29	0	2
1799	128	198	39	22	25	53	0	9
1800	136	207	22	17	20	49	2	10
1801	124	217	24	31	25	25	4	7
Total	907	1412	237	164	148	285	16	48
Mean	129+	201+	34—	23+	21+	40+	2+	7—

" To what degree our climate, when compared with others, should be deemed wet, a few observations will tend to ascertain.—By the rain-gauge, in the preceding summary, it appears that the maximum annual quantity here, in the space of seven years, does not amount to 35 inches; the minimum is below 26 inches, and the mean is 31.118147. The greatest quantity that I have found to fall in this place, did not exceed 36 inches: whereas at Keswick, in Cumberland, the max. amounts to the enormous quantity of 84.6051, the min. to 34.3057, and the mean to 68. 5 inches! At Kendal, in Westmoreland, the rates are nearly the same. The medium quantity in Ireland, at large, is from 24 to 28 inches.—Taking the annual quantity of rain, that falls in the east of England, which rarely is less than 18 inches, and the max. of the west of that country, the average will exceed 51 inches, and we cannot suppose, that Scotland would produce a lower result."

" The frequency of our showers, and not the quantity of rain, has given rise to the popular notion of the peculiar wetness of our climate; but already, I hope you will grant, that I have brought cogent arguments to shew, that, in this respect, it is neither hurtful to animal nor vegetable life; and that, in fact, it is not comparatively humid and rainy. Sometimes in spring seed-time is retarded a little by wetness, but our spring seasons are so often cold

and

and backward, that early sowing is not always most eligible in this district.—If, in summer and autumn, frequent showers render the hay and grain harvests *brittle*, vigilance and industry would, on these emergencies, be as successful as they are in the *catching* harvests of England; and improved culture would prepare the crops to meet the exertions of the husbandman."

Sect. 4. *Soil and Surface.*

In order to present the reader with a clear view, as to this part of the report, I shall here make another distinction of the county, which is, into its natural divisions.

There are, 1st, the coast of the sea, with the flats of Lough Foyle; 2d, the valley of the Foyle, with the liberties of Londonderry; 3d, the vale of the Roe; 4th, the vale of the Fahan; 5th, the vale of the Mayola; 6th, the coast of Lough Neagh, with its flats; 7th, the half valley of the Bann, with the liberties of Coleraine.

The first division begins at Carrick Reagh, near Port Rush, and thence proceeds below the western forelands of Magilligan.

Reserving my observations on the stratified materials of this district, till we come to treat of mineralogical

ralogical subjects, I shall only mention here, that the strata along this range are chiefly basalt and trap, intermixed with zeolite, steatite, and ochreous substances.

Immediately under there is a bed of white lime, which only begins to shew itself somewhat to the west of Downhill; it is thence apparent until the confine of Woodtown, rising towards the west: after this it is only unseen, because it is covered by the rubble and fallen rock of the superincumbent masses, till it presents itself, still rising as it passes to the west, under the steep and elevated sections of Benyevenagh and its adjacent forelands.

The soils beneath this are clayey, stiff, and reddish, composed of the solution of the soft argillaceous grit, which sustains the bed of lime. It is frequently interspersed with knolls of basalt, or with detached rocks and tumbling stones of the same substance. Nearly of this kind is all the high arable from beyond Coleraine through Dumbo, by the high lands of Magilligan; this soil is cold and difficult, but it is strong, and when kept open with sand or shells, or even when often turned, it forms a desirable farm, especially if moss and lime be convenient to enter into the compost.

Lower than this, in general near the shores, the surface is covered with looser materials; thus along the shore of Ballyaghran, even among the rocks, we

find sand, composed of the minute crumble of the basalt. This sort is blackish-brown, surcharged with iron; it concretes on the surface, and is ungenial to good plants. It is accordingly either naked, or covered with ling. There are spots of better soil on the same coast, approaching in quality to a sandy turf, and even to a gravel; but they are all incoherent for want of a due proportion of clay, except in the bottoms, whither the clayey matter has been washed down by the rains. These bottoms are rugged, sour, poached, and covered chiefly with the coarse tribes of aquatic vegetables. At the confine of the Bann-mouth, the sands, being more flinty, are of a whiter colour. They are blown into hillocks, which are kept from shifting, only when retarded by the roots of the bent. These are of considerable extent on both sides of the river, and are just so far useful as they afford a scanty provender, with a shelter, for rabbits. Near Downhill, the basalt knolls, with interspersed vegetative surfaces, formed chiefly out of the decay of their materials, are extended to the margin of the ocean.

From the rocks of Downhill to the rabbit-warren of Magilligan, the coast affords no soil whatever, but only a sandy beach, bounded on one hand by the billows, and on the other by the perpendicular basalts. The remainder of the low ground, till you arrive at the mouth of the Roe, consists chiefly of

sandy

sandy bent hills; within these are *druims*, or low ridges of a sandy bottom, with a scum of vegetative turf. There are also narrow bottoms of peat-like composition, which run between those, in a remarkable parallelism, all the way from the high lands to the shore; these are called *misks*, and are much more favourable than the former, either to pasture or tillage. All this soil has a substrate of sand, whose depth is below the level of the ocean.

The extent of this intermixed soil will best appear by turning to the map, where also will be seen an area of deep turf bog, occupying, in the interior, no inconsiderable portion of this tract.

There is only a narrow stripe of stiff clay in this direction, on the north side of the mouth of the Roe; but on the south, the prevalent character of the soil is that of a marley ouze; this is termed *carse* by the Scotch, and by the English *warp*. I have seen this soil opened to the depth of seven spadings, and found, that it is composed of ouze and shells alternated. The flat country, which consists of these materials, extends four miles in length, and two measured inland; that is to say, from the Roe to Walworth, and from below Burnally to the coast. Fossil shells are dug up in all the ditches through this district at certain depths; yet the surface is not always of this marley character. The bottoms of Aghanloo, for example, are of the stiffest clay, almost impassable to

the plough; these are occupied in meadow, over a great extent on the east bank of the Roe. Here and there some turfy soil occurs. Forty years ago, these bottoms were almost inaccessible, except to wild geese; they now are under a miserable management, in grazing for nine months, and in meadow the remainder, that is, from June to August; the hay of these three months sells at six guineas per acre on the foot. There arise, however, out of this flat, near Bally-henry and Carrick-muddle, sandy ridges which pass coastwise by Carrick-menagh, Carrick-reagh, and Carrick-clare. These banks die away, as the beach winds to form the bay of Ballymacran. Below this sand lies stiff marley clay, in depth about eight feet, and beneath this white sand of unknown depth.

From Ballymacran through the Back, by Brough-glasco, and passing under Walworth, the beach is covered with herbage, furnishing salt marshes in great request for grazing horses. The same stiff soil is continued, with some little interposition of mossy meadow ground, sometimes narrower, sometimes broader, for more than six miles. Below Wilsborough there runs a low bank of gravel and sand, which denotes the approach towards the mouth of the Faban. This ridge is, however, but local, for the general tendency of the subsoil is to the quality of a rich and loamy clay, in some places bluish, but

but more commonly reddish, and somewhat flesh-coloured; over this clay lies a peat-moss, the extent of whose surface is best defined in the map. The depth of this bog is from less than three to more than twelve feet. Under the bog, and before the plough can enter into the subsoil, there lies a thin concrete, which is so difficult to penetrate, as to be a discouragement to the reclaiming of the ground. This crust appears to be formed by the agglutinating power of iron in a moist state, with which metal aquatic vegetables abound. The peat-moss in decomposition furnishes the metallic solution to the surface beneath. All waters coming from bogs, likewise the stones in the rivulets, denote this; and so do the deposits of umber-like ochre, which are amassed in convenient situations. Mr. Scot remarked to me that, where the subsoil is clay, the moss is deepest; where the moss is shallow, the bottom is either gravelly, or else a rubble of rounded stone. One corner of this flat, covered with peat-moss, stretches considerably inland, almost to the village of Muff.

From the Fahan, in a straight line to the Rosses-bay, in the basin forming the harbour of Derry, commences a chain of lakes, some of which are now filled with peat-moss. The principal of these is the beautiful lough of Enogh. This chain seems to denote the former course of the Foyle, which, perhaps, dividing here, as around Derry in former days, insu-

lated

lated that high ridge, which lies between the lakes and the river. This ridge exposes, on the side of the Foyle, a solid barrier of schistose rocks. On the side of the lakes it is *fleshed* over with gravel, whose swells and hollows indicate the vortexes, which, at a remote period, have shaped these surfaces betokening the confluence of the Fahan and the Foyle. From the Rosses-bay, by the waterside and Prehen to the new buildings, (which place is the terminating point of the county) the soil adjacent to the shore is a shingle or slaty gravel, and the subsoil is either hard schist, hornblende, or soft slate. The bank above this is steep. But though this is the general character of the soil, no inconsiderable portion of it is of a stiff cold blue clay, apparently the decomposition of the softer schists, which sort of soil, having a north-western aspect, is far from affording satisfaction to the farmer.

Still lower than the level already described, there is extended, within the tide-mark, from the mouth of the Fahan to that of the Roe, a vast area of ouzey beach; it seems to be the continually accumulating deposit of the mud or warp, brought down by the rivers, which settles, after a gentle eddy, in this shallow and quiet recess.

Valley

Valley of the Foyle.

Under this denomination, I comprehend all that tract of country, lying between the flats of the coast and the interior high lands. It may be said to commence, where an out-branch of the ridge, connected with the Loghermore mountains, pushes towards the beach; this point very nearly coincides with the barony march, a little above the wood of Walworth.

Turning to the west, the ground, immediately above the flats, is strong loam, forming a soil generally adapted for wheat, barley, flax, or potatoes.

At the openings of the rivulets, somewhat higher, gravelly strata generally occur. The most inconsiderable streams also have, on their immediate bank, a loamy level, and for the most part, over this, a gravelly ridge. These loams or gravels are straightened or enlarged, proportionably to the extent of the open, through which the channel of the water has found its way.

It frequently happens that, even in the high gravel grounds, strata of clay appear. These last seem to have been the decomposition of the more argillaceous parts of the schist rocks, on which the soil of this district lies; the more flinty parts of the same rocks, having better resisted the action of the elements, remain under the character of gravel and coarse sand.

By

By experiment on the clay of Fahan-vale, I find that blue paper in contact with it, when moist, changes to the colour of bright red; an appearance, which indicates the presence of the acid. The substrata are inclined to the pyritic schist; and still deeper red freestone is found with other indications of coal. It is not improbable, therefore, that this acid may be the sulphuric. Where no river occurs, the general decomposition of soil, on the same level, is that of stiff cold till, of unequal depth. Through this, the flag-stone of the country appears in detached rocks or continued ranges.

The grounds above this gradually decline in fertility and depth, till on the summit there is nothing but quartzy rubble, or peat-moss.

Descending from this high region, the soil gradually improves to the village of Muff. In this neighbourhood there is a recess, towards the opening of the glen, of excellent soil, or rather of varieties of the best soils: we find gravel, loam, strong clay, and combinations of these in the happiest proportions.

Towards Derry, the swelling hill of Kilnappy is of superior quality; between which swell, and the ridge of Muff, there is a narrow inlet into the vale of the Fahan, which to me has greatly the appearance, as if the river, or a part of it at least, had passed in this direction. This flat is filled with mossy loam, and through it issues an inconsiderable stream. The

soil

soil from this, round the banks of the Fahan, is rather nice than fertile, consisting chiefly of ridges or swells of gravel.

On all sides of the Fahan, as it approaches the Foyle, there are not only detached swells, but a continued *tire* of gravel, perhaps sixty feet higher than the vale, through which it now passes. One is led to think, that these higher ridges of water-rolled materials, which wind with the present course of the river have been formerly its banks, and even its channel at some period still more remote.

Near also to where the Fahan falls into the Foyle, commences that extensive flat of bog, which reaches, with one angle interiorly, near to the village of Muff, and stretches coastways from the freeholds of Tully to the manor of Walworth.

Having already noticed the immediate bank of the river Foyle, little remains to be said of the higher lands, proceeding towards the south. There is, however, this difference, that neither are the ridges so high, nor are their descents so prolonged; of course, there is but little heath on their summits, and less depth of vegetative soil in their declivities.

Let us now pass to the opposite bank of the Foyle. The peninsula of Culmore is but an assemblage of gravel, intermixed with sands of a very pure quartz. The vegetable surface, where there is any tolerable, is inclined to a peat-moss. It is true of all soils that

that, where quartzy pebbles predominate, the surface is ungrateful.

At Ballymagard, there is both a shingle of slate, and a cold yellowish clay: the subsoil of this, as of the eastern bank, is flag-stone, in variety, from whin to slate: this soil is good for most of the products of husbandry. Trees also thrive in it with great vigor; and the aspect is favourable.

Pretty nearly of the same description is the lower part of Sir George Hill's demesne at Broomhall; the cold blue clay predominates. Again, at Sir Andrew Ferguson's, and thence to the southern termination of the ridge, there seems to be an increasing fertility.

This fertile bank is no more, however, than a border, the interior of which is, generally speaking, shallow, cold, and rocky. In other parts, where there is any kind of hollow, it is occupied by peat-moss; the quality of this is not very good as fuel, and, as arable, has been sadly neglected. The most considerable of these mosses is that of the race-course. Other varieties of soil occur; and among these, some swells of light shingle, intermixed with a reddish powder, like the rust of iron.

Between the ridge already mentioned, and that of Penny-burn mill, passing by Troy and Mr. Alexander's farm, there is a flat bottom, well adapted for meadow, which, proceeding by Clogh-glass, ends at Lough

Lough Swilly. It is of various breadth, from that of a furlong to that of more than a mile.

The high grounds, bordering this bottom, are less fertile, than at first view might be expected; they abound in red ochreous till, which is, apparently, the oxide of the ferruginous schist beneath. There are, however, in sheltered recesses, on the banks of the rivulets, some better grounds; occasionally too, some miniature landscape occurs, where the streams open to the valley, and where oaklings and alders are permitted to fringe their native rocks.

From the verge of the Liberties, in this direction, returning to Clogh-glass, there is a smaller opening, through which the Craggin-burn traces a demarcation, nearly at right angles with the former. The ridge between this, and the flats of the bog-side, is naturally barren; yet, on the declivity facing the city, manures, with a good aspect, have rendered it not unproductive, even in high situations. It is still more genial on the descents, where the soil abounds in the shiver of tender slate. From Penny-burn-mill to Miltown-lodge, near the level of the river, it has received a covering of loamy ouze, in many places of great depth and fertility.

The hill of Ballyongary is like the rest. I have little particular to observe on its soil, but that it includes some rich soils and good farms, the best of which is at Mullennan. In this hill also, as in the rest,

rest, the stony matter is flag, of which there are several varieties.

The city of Derry is built on an almost insulated hill, great part of whose soil consists of a stiff, cold, yellowish clay, frequently three feet in depth. Beside this are many varieties: such are the dark and rich vegetable surfaces of the gardens, the mossy soil of the bottom near the bog-side, and tender shiver of slate with mixture of loam: all these lie upon strata, comprising many varieties of the schistose class.

In the rear of all these, are the mountainous tracts, hamlets and cultivation here and there interspersed among the arable; the rest is bog and rock.

Vale of the Faban.

If we confined this district to the banks of the river, from which we derive its name, it would begin at the *Sheskin* or quag, under the precipice called the Eagle's rock, at the base of Sawel mountain, and at the march with the county of Tyrone. But we must take in with it all the smaller vales, on the banks of the rivulets, which fall into the Faban, before it winds round from the Bally-mullans into the district of Claudy.

I cannot note any thing very particular on those subdivisions of the country. The solid strata are schist, the summits wild, the declivities, in favourite

spots,

spots, are not unfertile; and the *loams* are, as usual, enriched by the deposits from the mountain torrents.

From Drumcooil to Learmont, the aspect of the country is chearful, and frequently romantic. In the valley of Strade, there are beautiful gravel swells; and, as in all similar circumstances, the surface has that tumultuated appearance, which may be observed at the confluence of two rivers, or, what is the same thing, when one river empties into another. The gravelly swells of the district, where the Faure-glen opens into the valley, are remarkable.

About Cumber church too, there are some nice gravels, both in the shape of high banks and swells. The cause of these is the entrance of the Glenrandle river into the Fahan. The same surfaces occur, where the Bond's-glen rivulet joins; and, again, near Mr. Atcheson's, where the Burntolloght comes in from the other side. How high and powerful the currents have been, whose vortexes accumulated these masses, may be exemplified in their effects. At the confluence of the Burntolloght with the Fahan, these round gravel hills are, as I take it, not lower than 300 feet above the bed of the river. In short, wherever any streamlet makes its way into this vale, the same kind of materials are disposed in corresponding shapes.

This vale is connected with that smaller one of Bond's-glen, which is much more fertile; it is among the

the most favourite spots of the county, having a loamy, though very narrow bottom, lime, in many places, on its declivities, and even on the highest top of its western boundary Sliabh-cark. As it opens to the county of Tyrone, this bottom expands into fine meadow.

I may now say, in general, of all the lands midway between the loams and the high wastes, that they comprise all the following varieties: 1. Spouty blue clay, with fragments of quartz, slate, and a shallow surface of soft peat. 2. Shingle of slate, interspersed through red ochreous powder or sand. 3. Shingle, with gravel and loam. I instance these in the climax of their value.

Great part of this vale is turbary, most valuable to the inhabitants, and to the bleach-greens, yet giving an air of sadness and sterility. There are also large tracts occupied with natural wood; but as to the beauties, derived from these and some thriving plantations, we must reserve our observations for the present.

This vale is of no considerable breadth, reckoning all within the high arable on each declivity; from its beginning to the bridge at Enoch, it would not average, in width, three quarters of a mile. It is broadest below Ash-brook, where the river turns almost at right angles to accompany the course of the Clondermot stream.

Next to the Roe, and to some parts of the Mayola, I think, the Fahan displays, along its banks, from Clondermot to its opening on the coast, one of the most delightful tracts in all the county. The soil is inclined to clay, in high situations, from the entrance through the little vale of Clondermot, above Prehen, till you pass to the valley of the Foyle. In fact, these high grounds are but a succession of the schistose hills, which occupy a great portion of this county. One branch of this range, almost insulated, advancing to the south, separates the lower vale of the Fahan, with that of Clondermot, from the coast of the Foyle. It is enough to say, that the lower soils are the same in kind, but better in depth and condition.

Vale of the Roe.

In the demarcation of a valley, so much of the surface, at its opening, may be said to belong to it, as hath received the spoils brought down by its river. If there be no close ridges to confine this opening there, so much of the greater plain, into which it discharges its waters, as lies within the extreme points of its expanded forelands, may be accounted as belonging to the lesser valley, or vale of the river.

If a line were drawn from the headland of Benyevenagh to the rocky point above Walworth, it would measure

measure about six miles, and would form a base to a species of irregular triangle, comprehended in part between this line and the schist ridge of Loghermore, nearly coinciding with the barony march, as traced in the map, and ending at the foreland of Moneynieeny. Turning thence to the north-west, and taking in the source of the river Roe in Glenshane, we are to follow, for our third line, the summits of the basalt mountains, which form the eastern barrier of this vale.

I shall proceed to describe the soils of this garden of the north. Let the reader keep in mind, that all the flat country, adjacent to the coast, has already been noticed; we are, therefore, to commence with that remarkable ridge of gravel, which extends from Castle Lecky in Magilligan, by Duncruin, round the south-western base of Benyevenagh, through Ballycastle, Artikelly, Derry-beg, Streeve, Newtown-limavady, (Lim-na-vadi) on one side of the Roe; and on the other by Crindle, Lomond, Broglasco, the charter-school, and to the wood of Walworth.

The regularity in shape and height, which distinguishes this range of bank, considered along with the flatness and materials of the plain below it, are, as first sight, notices, that this out line has been the bank of the sea at the epocha, when the plain of Myroe was covered by its waters.

Within

Within this bank the soil is, in variety, from a loamy to a hungry gravel. From Ardnargle to the glebe of Finlagan, there is a vein of shallow moss, covering pebbles of quartz. There is another of the same quality, from Granagh to Dowling, on the opposite bank. There is a third, still greater, above Newtown-limavady, extending towards Balteagh. These are exceptions to the general beauty and fertility of these grounds.

I have marked on the map the jutting and retiring lines, which have been occasioned by the action of the rivers and streams, which fall into the Roe. The rivulet at Bessbrook also, and that of Ballykelly, have had their part in forming the curvings of those banks. I need scarcely repeat, that along the course of every one of these the same effects, as have been described on other rivers, have taken place. Nor need I take up the reader's time except by mentioning, in general, that, wherever one of these waters falls into another, or opens into the greater valley, there is uniformly an eddy-formed surface, whose contents are water-rolled materials. These materials are also, in a great degree, referable to the higher strata, from which they have been torn. Thus where the waters have descended from schist regions, the stones, pebbles, and sands are of the same varieties. When a river has poured down from a region of basalt, the rubble in its banks corresponds

with the basalt and its accompanying strata. In this county the last instance is more unusual than the former, because, among the greater rivers, the Fahan is entirely schistose in its communication, and of course in its gravel; even the Roe, passing between the mountains of schist and basalt, has mixed their spoils; and even the lower Bann, though in contact only with a basalt region on both sides, yet in its upper currents above the lake has passed through regions of schist and granite, whose fragments I have frequently found on the mountains of basalt, 900 feet higher than the present level of that river.

As to the loamy level, or immediate *hoames* of the Roe, it is of considerable extent, probably, on an average, about a furlong wide, and fertile in the first degree from Lomond to Newtown-limavady; it is occupied in all the varieties of culture, but chiefly in meadow. From Newtown-bridge it is somewhat contracted; and, from the Dog-leap to the Carrick, is confined to the channel worn by its torrents through the rock; thence, to the old church above Dungiven, this level is of various dimensions, scarcely ever exceeding 100 yards.

Tracing the western side of this valley through the high swells of Daisey-hill, we find on the same level, proceeding towards Dungiven, a country rather cold and rocky, intermixed with some clay hills, and occasionally some better soil. There is,

behind

behind Daisey-hill, an open of undulating gravels still more elevated, from the Knocken-duns by Tartnakelly and Mulkeeragh. This great extent of undulating surface lies from the opening of the Roe to that of the Ballykelly rivulet. This intermixture of gravel and cold clay takes place, with no remarkable circumstances, along the west bank of the Roe, up to the townlands of Derry-nafla and Ovil. At this district, the gravel swells are very great, and very beautifully enlarged; they seem to lie between the falling of those waters, which empty into the Roe, and those which are discharged by the Fahan. The point, which marks the ending of this valley, is between Drumcovit and Terrydreen, because it is here that the valley land is at the highest; a circumstance, which is easily perceived by adverting to what is called, the fall of the waters.

Into the Roe fall the waters of the Owen-reagh, Owen-cam, and Owen-beg; of course, the territory around them, especially towards Dungiven, is abundant in gravel. In fact it is, with some exceptions, a nice and not unproductive soil. The substrata of all this country schist-rock, with all its varieties.

As to the high regions on the south-west bank of the Roe, they have little to distinguish them from those above Muff already described. I have indeed to mention, that under the moss, and over the schist-rocks, nearly in the highest districts, there often lies

a bed of clay, in colour between yellow and brown, and mixed with this clay are pebbles of schist and quartz; a certain indication, that these altitudes have been, more or less, submitted to the action of waters.

Just at the turning of the waters under the headland of Moneynieeny, we may reckon the top of three vallies, because here streams are seen to pass down into the vallies of the Fahan, the Mayola, and the Roe. This last descends through the mountain towns of Tamna-Arran.

From Moneynieeney is continued the basalt range, forming the north-eastern barrier, by Benbradagh to Benyevenagh. I need say little more of the gravel grounds, which occur successively, as the Gelvin, the Balteagh, the Castle, the Curley, and other less considerable rivers, join themselves to the Roe. I shall also refer the reader to what is advanced on the fossil history of this county, under its proper head. It is however indispensible to observe, that the subsoil of this bank is totally different from that of the opposite; and that, except where the river has not found its course *exactly* at the boundary line, which is drawn by nature, there is not in one bank a single fossil, which is common to the other. I do not speak of detached matters brought adventitiously, but only of substances found in their native stations.

Above

Above the gravel in this county commences a bed of clay. The general colour is red, with veins of blue; it is stiff until turned to the frost and sun; after such exposure, it becomes manageable. As to farming purposes, is has been already described when treating of Magilligan. This clay is not always washed down from the decomposition of rocks, as in the flag countries, but is an inclined plane or oblique section of an argillaceous bed, on which first the white limestone, and over that the basalt and trapp rocks are stratified. In Magilligan this clay dips with the lime under the sea near Down-hill: at Benbradach it rises with lime nearly to the summit of the mountain. It lies in an inclined plane, rising in an angle of about eight degrees towards the S. West. This clayey bed is intermixed with some varieties. Immediately under the lime there is a rich marle, in colour varying from blue to yellow and white, and with other changes of stiffness from that of clay to that of burned lime. The thickness of this bed is about 12 feet. Other beds of marley matter, with gritty limestone, are met in lower situations, and still lower, bluish flag of lime, with marble and shell-stones. In the bed of the Balteagh river also is a calcareous freestone.

Now as these sources of fertility may be found, in my opinion, almost any where from the sea to Benbradagh, it is evident, that there have lain hid in this

region inexhaustible mines of riches, utterly unknown and untouched. It is true, that the nature of this stiff soil is not adapted to receive immediate advantage from this manure; but is there not bog, gravel, and sand? Why should these languish, when the medicine is at hand?

The surface of this valley, even where it has an eddy-form shape, often contains this red clay, and not gravel. The swelling outline is occasioned, probably, by the easy decomposition of this material, during the action of higher waters. In all the acclivities the farmer may be sure, that the surface of his field, if the soil is clay, is but the solution of those strata, which penetrate under the mountain; and which, from their calcareous nature, may become in the highest degree profitable.

There are also, midway to the tops of the mountains, a kind of terraces, sometimes extending with the range for miles, and are, frequently, two or three hundred yards in breadth. If they lie near the lime, their fertility is great; if in fallen masses, then it depends on the nature of the superficial stratum.

An inexperienced observer would frequently be led to think, that the rocky strata lay much lower; but this is owing to the crowds of tumbled stones, which have rolled from above. For it is an invariable fact, that basalt never is found beneath white lime.

Above

Above the lime is the region of basalt, and the soil thenceforth is without clay. It is only a rust, or oxide, of the softer parts of this iron stone. It is loose, hoves with moisture, and has neither cohesion nor strength: witness the wretched crops of every thing, but potatoes and straw. The country people significantly term it, deaf land.

But though this soil is ungrateful to the plough, even the summits are admirable for sheep-walks. I shall here make an observation, which is true so far as my experience goes. However high the situation of a basalt mountain, yet if the immediate subsoil be of that fossil, which is copiously intermixed with basalt, and known to fossilists by the name of zeolite trapp, and to the country people by that of rotten rock, and glittering stone, in this case the soil is comparatively fertile, and the herbage sweet. Thus, for example, the highest verge of Benyevenagh, 1280 feet above the sea, is greedily frequented by sheep; and, instead of the coarse and aquatic plants, presents an elegant carpeting of shamrock, daisy, butter-cup, and plantains. The same applies to Benbradagh in similar circumstances.

But where the subsoil is hard basalt, there we find bleak knolls, rising out of bog, and deformed with spral and heath, and all the inesculent products of the morass.

It

It is also a fact that, when the character of the basalt is soft, that is, where the flinty matter is in proportion less than it is found in the hard, then the stone ochreates and exfoliates. The farmer may observe this in the stone ditch, or rocky knoll; the appearance is, as if a flake of rusty pot-metal had been loosely fastened on the stone. This is, in fact, the process of the formation of these soils, and it will be found, that there is always an increase of receptive earth, where this process is observable. The country people think, that it is the stone, and not the soil, which is increasing.

Vale of the Mayola.

The vale of the Mayola, bounded by the descent of Sliabh-gallan to the south, has to the north the declivities extending from Moneynieeny to Carntogher, and so far it divides basaltic promontories. Further to the west, the sources of its waters are, in the high regions of the schist mountains, connected with Sawel.

The soils near a river, which spreads its arteries through mountainous tracts, are always subject to the ravages of their torrents. Such is the case with the Mayola.

By embankments sufficiently strong, the rich levels or *straas*, which occupy the base of this valley, might

might doubtless be secured. As it is, these *hoames* are ravaged by the change of its channel, and the spread of its waters. Bridges are carried away; the very roads are sometimes obliterated.

Proceeding to the opening of this vale, near the parsonage of Ballynaschreen, the banks, for the most part, are high enough to restrain the waters; yet the soil, though most frequently fertile, is barren and cold in many places, where such surfaces might not be expected.

Advancing still farther to its opening, the swells of sand and gravel seem to have buried the rich loams, which you have left behind. These swells are intermixed with mossy bottoms, and flats of ling. Of this character is the greatest part of the surface, near the parsonage of Kill-cronaghan. I think, that the lower these swells are, of so much the better ingredients they are composed. On the contrary, the great, I might say prodigious cones, which stand forth to encounter the current of the Bann, in the flats of Lough Neagh, contain little or no *minute* subtances, but consist of water-worn stones. I took from their quarries specimens of basalt, flint, white schist, gneis, quartz, and even granite, both red and grey, all rolled and rounded by water.

The dells or bottoms among these great swells, are often inclined to mossy; the midway tracts are light and hungry; the summits are absolutely barren.

Upon

Upon the whole, we may say, that the soils throughout the lower region are various. Rust of basalt, gravel, shiver of slate, pebble of quartz, blue clay, and moss frequently reddened by solution of iron, constitute the materials, which go to the composition of its soils. The strata laid open by the north-eastern declivity of Sliabh-gallan, like all those which sustain the basalt, are of the same mixed character, as has been described, when treating of Magilligan, and the east of the Roe. In this district, these soils, in their nature stiff, are little inhabited, and less brought into tilth. I need not here say, that they are highly improveable, considering the neighbourhood of lime and turf.

Above this lies the stratum of white lime, connected by a mass of basalt.

Nearly the same may be said of the basalt mountains, on the opposite side. There is, however, no lime on this ridge, that had vanished at the summit of Benbradagh.

We will take leave of this tract by marking the two passages, by which it may be entered from above.

On the Sliabh-gallan side, the entrance in every respect is naked, except where, in some few spots, a clump of native alders bestows an air of ornament and comfort Descending on the side of Moneynieeney, the picture is at first but wild. As you descend the winding of the stream, the diversified surface of

the

the ground, with hamlets and tufts of trees, form an agreeable aspect.

The mountains at the top, or to the east, are all flag. Those to the south-east approach to granite. The line dividing the basalt from those mountains passes under Moneynieeney, and thence across the valley to the east of the cairns of south Gallan, and so down by Tin-teagh, to the confines of Moneymore. The soils in this interval are sandy and gravelly, and are, for a great part, the solution of the grit, which intervenes between the termination of the basalt and the commencement of the other mountains.

Coast of Lough Neagh with its Flats.

If you suppose a line drawn from the northern part of Lough-beg to the base of Sliabh-gallan, which advances on the south of the Mayola; this line, taken with that of the shores of the lakes and the march of the county, will include an irregular triangle, whose area is the district we are going to describe. At another place we shall notice the high regions, which are the partition of this from the vale of the Mayola. At present we begin where the small river of Lissane, having passed the heaths, is preparing to enter on the plain. The soil is a sharp sand of granite. This obtains over the whole district to the commencement

mencement of the basalt at Carn-daisey. It spreads from the rocks to the flats below. This species of gravel is not fertile; the crops of oats and potatoes are light, but timber seems to succeed. The heaths above, and on a level with this, are capable of easy and profitable improvement; they are deep enough, in general, to bear the turning of one foot, reserving one or two for soil. The streams, which pour copiously down these declivities, are ready to perform the duty of perpetual fertilization, whenever the surface has once been converted into meadow, a species of cultivation, which answers best in high climates. It is not till you have passed the improvements of Lissane, that you can justly call the level of the county fertile; for though Mr. Staples has covered the bog with the verdure of meadow, and the sharp gravels or cold *till* with barley and oats, yet the natural state of the surface was wild, and has still a propensity to reassume the savage condition.

The low country exhibits a rich landscape. It seems to be a mixture between a sandy and a clayey loam. The surface of the former is generally swelling, while that of the latter is plain. Some extensive flow-bogs are the only interruption to its fertility; otherwise, its entire contents are deserving of the highest commendation. Barley seems to be the favourite

crop,

crop, even in those strong loams, which would produce wheat of prime quality.

Around Coagh we find considerable steeps, and thence to Spring-hill great variety of soils; for, besides those above mentioned, there is a loamy clay and gravelly loam of excellent quality. There is also peat-moss in the interior of these heights, but not more than will furnish a sufficiency of fuel.

This range of high land is extremely beautiful at Spring-hill, and over the town of Money-more. It is a stately terrace, whose perpendicular section, viewed from the westward below, exhibits, under a very thin covering of basalt rubble, a plane of white lime, reddish marl, with gritty and argillaceous substances.

At Ruskey also, Mr. Lecky's property, there occurs a second instance of the white lime, topped with basalt, not very considerably elevated above the level of the lake. The soil is good, the face of the country chearful.

Between this terrace of Spring-hill and the mountain, and the boundary just described, lies a fine territory. It is a flat of loam, and is called, very justly, the golden vale of Bally-dawley. I take it to be next to Myroe in soil, and superior in shelter and aspect.

I have traced on the map the extent and direction of this secondary ridge of basalt, which rises from the level

level of the lake, proceeding southward, and nearly parallel with the rear of the great ridge already described. It passes to the west of Magherafelt, descends thence towards Knock-leighrim, where it receives a sudden elevation, and forms a very fantastic outline.

If we reckon the western escarpment of this range as its face, we shall, of course, be allowed to speak of the descent toward the lake to the east, as of its rear. Passing this direction to Ballyronan, the country is barren and rocky, stiff cold bottoms—swells of rust, and fragments—bleak and rocky knolls, little shelter, and as little improvement. Such is the general description, with some exceptions, of all the districts along the back of this range, until it descends near the level of the lough.

If we enter this flat country on the side of Coagh, very little of this barren district will be observed, because it lies to the interior, in the direction of north-west. On the contrary, from the Ballinderry river towards Salter's-town, there is a fine country, surfaces pleasingly unequal, fertile declivities, and rich clayey bottoms. There is also a considerable proportion of flat bog, which, though not beautiful, is a valuable accession. On the whole, there is, throughout, an air of comfort and plenty in the aspect of the country, the dwellings, and the inhabitants.

Near

Near Salter's-town, there is a great deal of gravel, which extends here along the shore, the soil decreasing in value. Towards Ballyronan, there are bottoms of clay, flats of peat-moss, ascents of rusty rubble, covered with ling, and higher still bleak knolls of basalt.

At Bally-maguigin, the soil is much better; the Moravian settlers in this place have built a neat village. They farm 100 acres annexed, and have exemplified to their neighbours, how valuable is the association of industry with morals.

Along the northern border of Lough-neagh, on the estate of Mr. Dawson, there is some excellent land towards Toome; and thence to Ballaghy lie vast flats of bog. There frequently arise at the bog swells of gravel, which are so entirely insulated, as almost to force the opinion, that this flat has once been under water, and that these swells have actually been islands. Along the northern borders of Lough-beg extend immense flats of clay, covered with the coarsest meadow plants, which lie under water several months in the year. The subsoil here is sometimes sandy, and frequently a whitish clay.

Under Ballyscullion there is yet some clay in the hollows, and near the lake, but, in general, the soil is light oxide, or gravel of basalt; the quarry, either near the surface, or exposed through it. Of course, the soil is poor, and the herbage scanty; but the prospect

prospect of the lake, with the island, and its old church, is fine. Below the castle of Ballaghy, and around the town there is a district very improveable; yet, in general, I cannot esteem the soils hereabout as good. The best of them lie in the small bottoms, or lowest swells; for the hills are frequently very light, and even rocky. Immediately in Mr. Spottiswood's farm there are some pleasant surfaces, but Mr. Spottiswood has great industry and zeal, qualities in a gentleman farmer, which subdue and embellish nature, even in her most rugged temperament. The country, to the opening of the Bann, is chiefly bog, with a bottom of clay, remarkably white.

Turning inland or westward, we shall again meet the secondary ridge of basalt at Knock-leighrim. At present we shall only remark, that it is composed of strata, exactly the same as those of Benyevenagh. The section laid open discovers nothing so low as that of the white lime, which I suppose, however, not distant from the level of the flat bottom. Close to its base, is a district of gravel, swelling uncommonly high: this takes place at the confluence of the Termanany river with the Mayola. These rivers have previously passed through a great tract of bog, the first from the north-west and by north, the second from the north-west.

From the new church of Larganagoose, by the Forge, towards Castle-dawson, there is a good country,

rry, and even in its bogs are swells, covered with planting, which takes away a portion of its otherwise melancholy aspect. Around the village of Castle-dawson, there is some of the nicest ground in this county.

Towards Magherafelt, the low grounds are inclined sometimes to moss, and sometimes to stiff clay. The swells contain water-worn materials, both coarse and fine. The portion beyond the town-parks is, I think, but partially improved.

Pretty nearly of the same character are the town-parks about Magherafelt. Proceeding to Desert-martin, to the wesward over the basalt ridge, called Sliabh-bwes, the soil of this ascent is a stiff reddish clay, and higher it partakes of the same materials as the mid-ranges of these basalt countries already described. There is gravel in abundance on the west slope, near the bottom.

Approaching Desert-martin, the river shews banks of red clay, covered with an undulated surface of gravel. These banks, when opened for quarrying lime, often shew, 1st, a clayey sand; 2d, coarse sand; 3d, fine sand; 4th, coarse gravel; 5th, soft marley red clay; 6th, flag-lime, mostly of a reddish tinge, sometimes inclined to blue. This district is, however, fertile, and extremely diversified as to outline.

Between the mountains on the west, and Sliabh-buidhe on the east, there is a narrow vale towards Moneymore; at first the bottom is clay, with a covering of peat-moss, not improved, but very improveable; farther on the soils grow light, composing farms, which require a continual recruit of vegetable manures.

On the Cranagh-burn, the basalt range displays white lime to the left, not perhaps higher than 100 feet above the lake, while, on the right, Sliabh-gallan presents the same fossil near its summit, perhaps 1200 feet more elevated. The grounds near Moneymore are neither unpleasing nor unfavourable.

We have now made a complete tour through this segment of the county, and I trust nothing has been omitted, which is very material to this part of the report.

Half valley of the Bann.

The river of the lower Bann commences its regular channel at the close of Lough-beg, a little to the left of Ballyscullion, dividing for many miles the county of Antrim from that of Londonderry. Of course the flat district, through which it passes, belongs to two different counties. Hence the propriety of distinguishing so much as lies between the

western

western bank of the river, and the range of mountain to the interior, as the half valley of the Bann.

There lies a very extensive bog from Ballyscullion by Glenowen. Within this are high and barren swells, with lakes and small bogs between.—The shape of the surface might be conceived by imagining bowls, some with their concaves up, and others among them inverted. Nearly in the same latitude to the west, and in the interior, we find some beautiful country around Tubbermore and Fort William. These chosen spots lie in front of the vale of the Mayola, and are bounded on the east by the great bog, which extends northwards as far as Maghera. About the last town the lands are in general fertile, and the surface, to a great extent, consists in swells, or, if I may use the expression, is bowl-shaped.

Let us hasten past Swatteragh, Garvagh, Erigal, Aghadewey, upper Maycosquin, and the inland parts of Dunbo. Describing one part of a bleak and unvaried region, we describe it all; deaf soil or rust of basalt, ridges or *tummocks* of rude basalt, bereft even to the sloe and the bramble. There are certainly exceptions, and these are on the banks of the streams, and still more at their junctions; where these happen, we find, as usual, favourite and fertile swells: such are at Garvagh, Kamas, at the Grove, at the Aghadewey, and the Cames.

Returning to the banks of the Bann, where it receives the Claudy river, we meet some good gravel. By the way of Miagney, through Tamlaght O'Creely, there is little to interest, except in some fortunate nooks of fertility. The only varieties are bog, rock, and rusty soil. From Tamlaght bog to Kilrea the same naked knolls, the same bog, the same fruitless soil. Here and there below the rocky knoll a lake is in place of a bog; but the tree, that used to shelter that lake, and to shadow that rock, is no more.

High gravels and lakes at Kilrea, which want only good soil, with wood, to form a landscape. This pleasing picture is of short continuance; for, except in some chosen spots, particularly at the junction of the Agivey and Aghadewey streams, and in the neighbourhood of Bovevagh, it is a dreary region.

At Camus there is some nice gravel country, and even loamy flats. Near the Bann at Castleroe there is also good soil. The same flat extends to the bridge of Coleraine, but it is cold clay, liable to flood, and ill managed. Along the heights is the farm of Tamnamoney, in general cold and stiff, but delightfully situated above the fall of the Bann at the Salmon Leap, and overlooking the extensive plantations of Mr. Richardson. I cannot say the soil is much better through this gentleman's demesne.

At

At Mr. Kyle's, and to the interior, is some better ground, especially in the bottom, near the suburb of Kilowen.

The demesne of Jackson-hall is of a superior quality. The rest of the bank is barren enough. From Jackson-hall to the sandy country, bordering on Ban-brook, there extends along the river a great flat; its surface, for the most part, mossy, poached by the feet of cattle, and taken up with unprofitable plants. Some future day will see it dressed into meadow, of which improvement it is certainly capable.

Let us now pass over the Bann, to sketch the soil and surface of the Liberties on the Antrim side.

The soil, on which Coleraine stands, with the immediate town-parks, is a rubble of basalt, water-rolled in general. Whatever has been the original hue, the surface has now the dark brown colour of mould, abounding in vegetable matter. The opportunity of being often dunged is in part the cause of this, and of its productive capacity.

Towards Mount Sandale the soil becomes more clayey and less fertile. Artificial moats or raths, peculiarly that of Mount Sandale itself, diversify the surface. These are still more ornamental from the planting, which is flourishing on some of them. The islands in the Bann are not without their share

of

of landscape beauty. Other banks are in a state of stupid incultivation, overgrown with whin.

On Mr. Crommie's property a turfy surface is sometimes spread over a bottom of clay. The rounded hills, when opened, shew basalt materials, water-rolled and stratified, some to the size of a large paving stone.

I was sorry to note the quicks and hedge-row ashes failing greatly in this colder clay, which some fostering landlords, such as the late Mr. Lyle, and the present Mr. Crommie, had planted there

Returning, or rather crossing through Ballynag and Ballyvendrick, we find some shelving grounds, with a soil more manageable, or, as it is called by the farmer, more hayley.

The swells are equally good in the middle parts of Knockencarrick; the bottoms are of coarse meadow.

Hence proceeds that range of stratified knolls, of which Downhill is the highest, and which, passing by Islemore, Clogfin, and Islaerne, confines the liberties of Coleraine.

By Bally-M'Plhennon, Roselick, Ballygallagh, and Ballyaghran, keeping to the higher lands, we pass through those knolls of basalt, with all their accompaniments. The same description answers to all the higher ridges, which pass between Mr. Crommie's and the road to Spital-hill. From the sandy

part

part of the coast, ranging with the Bann, from Prospect towards Coleraine, there is a sloping ground of nice basalt gravel; it is intermixed with good dark vegetable mold, is fertile, particularly in barley, and produces oats in great request, as a change of seed for the clay farms in other districts.

At Flowerfield there is a dip or hollow, in whose bottom is blue marle. The same substance is abundant in this neighbourhood on the west bank, and in the channel of the Bann.

At Ballysally the rocky grounds push almost to the river, straitening the fertile lands, which again open widely on passing by Mr. Blacker's demesne, including some neatly dressed town-parks on the north-eastern approaches to Coleraine.

I shall conclude this sketch by adverting once more to those insulated knolls of basalt, which, at a distance, so much resemble Danish fortifications, and which have been so often noticed.

Whoever considers these knolls, will find them a compound of very hard basalt, and in general so pure, as to attain very nearly to a columnar structure. Again, if any person gives himself the trouble to examine the range of basaltic strata, on any great extent, where they are sufficiently laid open, he will find that the same stratified materials, taken horizontally, will afford great variety of fossil substances,

stances, from the hardness of basalt to the softness of steatite. Should any of these strata have been near the surface, during the action of waters in immediate contact with them, is it not likely, that the softer materials would first yield to that element? Is it not equally likely that, where the harder portion of this strata resisted the decomposition, they would retain their original level and posture? If these questions can be satisfactorily answered in the affirmative, there will remain no difficulty in accounting for those insulative knolls of basalt, without the hypothesis of their being thrust up from their native beds by any force of volcanoes.

After all that has been offered, I should think, that the description of soils and surface were incomplete, if I omitted to make the reader somewhat acquainted with the interiors of those great barriers, which interpose between the vales and vallies of the county. I do not propose to tire him by travelling over rock and heath, but to accompany me through those secluded inlets, among mountains, known to the inhabitants under the name of slacks, where often-times there lurks a charming spot of fertile soil and romantic scenery.

Slack of Faghanvale.

This leads from the high lands of Ballywolly through Glassyowrin, (the green mountain ash) by Altakackel to Slaghmanus, thence by the slack of Burn-tolloght, past the Niess; or else, by the side of the Ervay stream, passing the base of Mullaghbwee, and so by Brackfield to the vale of the Fahan.

Through this slack a road has commenced, which has not yet advanced far: it will be of use in opening the lime quarries, several of which lie unexplored in this district. With the addition of lime, great wonders may be wrought in these naked vales, where, near the streams, the soil is not ungenial, and where wastes of bog are in their mere idleness. At present the cottagers, scattered over the best patches, are poor, and their improvements limited. After topping the high valley ground, there is a tract in sight between the fall of the waters, looking either to the South-west or North-east, which, considering the elevation, is surprisingly green. Great part of it has been antiently under the plough; nor is it till lately, that the value of beef, at the war price, has induced the principal holders of these farms to waste the mountain hamlets, and turn the ground to pasture.

The

The green herbage, by the streams above-mentioned, is a contrast to the heaths, through which their vales wind, skirting their banks. There is scarce any track, still less may we call it a road, through these passages.

In some places the rocky falls of water are almost enchanting to the lover of landscape. The recollection of being miles distant from a human being, adds not a little to the awful contemplations, which such scenery inspires.

Passing by the cromlech of Slaghmanus, of which a drawing is given in its proper place, there is a slide-car rut-way to Listress, and thence past the water-fall of the Niess. I shall say something of the beauty of this scenery again: suffice it here, that about Listress are some nice lands, well occupied. A great deal more, annexed to the habitations under the title of outsport, or coarse grazing, might and will be reclaimed.

Slack of Muff-glen.

This begins at the fine land above the village, and is at first not without fertility. At Tamnyeerin, and by Sliabh-buck, one is even surprised at the goodness of the hanging slopes, and the forwardness of the

the crop. The mountain land is extremely like that already mentioned. A road is in progress through it on the Fahan side. On this track there is another cromlech, of which also a drawing is given. Entering on Brackfield moor, from the Londonderry road to Claudy, in order to trace back the passage of the slack, which opens at Muff-glen to the north-west, you pass, in the first place, over the barren moor of Brackfield. The stony substances, occasionally coming above the surface of the bog, are all schist, and are stratified, except in the instances of those detached fragments, which are bleached on the surface, like bones whitened by the weather. Here are traces of antient timber. On the left appears the stream of Burn-tolloght, with the hanging oak wood of Ervay, which is in the Grocers' proportion. The woods to be sold, when cut, will leave naked that, which is now a picturesque scenery. Over these woods Ervay presents some high arable of light shingle, interrupted by the craggy points of the strata, which here and there rise through the surface. Listress is the next village which occurs, in following the track of the slide-car, through gullets and stony ascents. These bring you here above the woods, which fringe the beautiful dargle of the Niess; from the Niess you take the open either by Mullaghbwee or Slaghmanus.

There

These are the defiles, which afford mountain passages from the Foyle to the Fahan.

Slack of Laghermore.

This communicates between the Roe and the Fahan; it opens a great vale above Cumber-Claudy, one branch of which, passing through the Faure-glen, opens between Dungiven and Feeny, the other, making its way by Ballyhollow, contains fine quarries of lime, a long time opened. The soils, of course, are improved. On the other side of Muldonagh the Burn-tolloght appears; its source is in a quag or *sheskin*, about three miles to the north-east, it passes in this glen under the bridge of Loghermore, and thence winds through a very green little vale to Slaghmanus.

Close to Burn-tolloght-bridge, there is a very high swell of gravel. You ascend past this for some miles over steep hills; the highest, lying west of the road, is Loughermore. On the left is a great plain, rather slope; it is covered even to the road with stumps of fir-trees of great size. The same blocks and roots occur by the side of the quag, where Burn-tolloght springs, and in various other places, proving to a certainty, that this naked region has not long since been a forest.

The

The soil under the peat is a solution of schistose matters, with crumble of quartzy slate; the peat from two to four feet in depth. This wild scene opens handsomely between the tops of Tartnakelly and Glack; the descent improves rapidly; the prospect is fine either towards Ballykelly, or Newtown, from both which places roads have been made not long since into these mountains.

Slack of Lissane.

As you pass the ruin of the old church, which closes the gorge of the Mayola, two passes occur; one, straight forward by Green-castle and the Mountirloney range, which belongs to the county of Tyrone; the other towards Lough Fiucach (i. e. the springing or ever-boiling lake). The deep glen or ravine, which borders this very alpine passage, and which might be imagined the last retreat of the persecuted Dryads, has lost very much of its romantic character by having lost its wood. Farther on, the boundary of the county passes through two lakes, which lie in the midst of a very elevated flow-bog, where the road sometimes trembles under the foot of the horse. In this wild region, the fossilist will observe with surprise the shortness of the interval betwen the great basalt mountain of Sliabh-gallan on his left, the schist rocks on which he stands, and the various

various granites close to his right. He will also view, not without reflection, the loose subsoil in the highest part of the slack, which is eddy-formed, and consists of water-rolled substances. Nor will he neglect to consider the more general subsoil of the heaths, which is a sort of clay, the solution and fragments of substances, in many instances, displaced from their original strata.

The narrow vale of the Lissane opens at this spot, the river springing from the lough, from which incident the lake is formed. Mr. Wright has embellished this mountainous seclusion by a neat cabin, with machinery for bleaching. The Messrs. Magills continue the same improvement lower down. At the demesne of Lissane the plantings are a delicious recreation, after long tracts of uninhabited heath.

The river being the march of the county, Mr. Staples extends his decorations on either side, into Tyrone and Londonderry,—

" Venusinus an Apulus anceps.

The fields are large, in good order, and well inclosed; the soil, oxide, and rubble of granite: cold clay, intermixed with fragments of schist, and peat-moss, form also a proportion of the lower surface. The grounds thence open widely into the flats of Lough Neagh already described.

Slack

Slack of Feeny.

It is lately opened by a road already some way advanced. It will disclose a bottom of coarse herbage capable of improvement, with high lands, which may one day be converted into better pasture. This passage commences near the top of the vales of the Fahan and the Roe, which it connects with that of the Fahan, opening thus a very wide and useful communication, and shortening the passage in the ratio of six miles to ten and a half.

Several glens, with their streams, enter successively into this slack; the most beautiful of these is that of Fin-glen. I observed, as usual, high swells and banks of water-worn substances, wherever one stream forked with another. The subsoil is, in general, hard schist, and quartzy, with some rocks of an approach to granitine, which might, perhaps, be termed *granitescent*.

Slack of Moneynieeny.

This is under one of the most conspicuous of the basalt forelands. To the lithologist it is extremely interesting, as it displays, under a certain depth of the argillaceous freestone, the immediate basset of the schist mountains from beneath the bases of the basalt.

basalt. Its junction with Ballynaschreen is not far distant from that of the former inlet; its connexion is thence, with the vale of the Roe, by the dreary track of Tamnaarran.

Slack under Carntogher.

This passes to the east of Moneynieeny; it shews a glen along the river, for a considerable way, which is neither destitute of beauty nor fertility. The country is entirely basalt; the acclivity under the carn is steep and dreary; it descends into the valley of the Bann, overlooking the fine country from Maghera to Tubbermore, in front of the Mavola.

Slack of Ballyness.

From the top of Balteagh, at the quarry of white lime, you begin by this passage to enter the wild and mountainous district of Glen-urragh, by Ballintemple, Errigal, and so into Garvagh or Swatteragh; it is basalt. There is in it one lime quarry marked in the map.

Slack of Dunmore.

If we sought the easiest and shortest communication between the precincts of Newtown and those of Coleraine,

Coleraine, it is certainly by this dip. As to the new road along the slope of the Kedy, it will be a direct line from Maycosquin to the country south of Newtown. It will also open a very improveable country. But if a line were marked from the bridge under Streeve by Derrybeg and Dunmore, and thence into the great bog of Coleraine, the passage would be the shortest and most level. At Dunmore are marks of antiquity, of which I shall hereafter make mention.

To the north, on the Dunbo side of the old road, is the ancient fortification of the Giant's sconce, which also is noticed in its due place.

It is needless to particularise the openings on either side, which unite themselves with this mean opening. I therefore omit some, which contain nothing worthy of remark.

Wherever there is any cultivation in the higher lands, the soil is of that description called (provincially) *deaf*. Such is that from Stradreagh through Knockmult, and to the great bog: this has all the appearance of having been a lake; it has banks of gravel to the north and east; its depth is unknown.

On the side of Newtown, the lower grounds are coarse meadow. At Largantea, there are parks of fine grazing, which fatten cattle of four or five hundred weight. The high mountains are sometimes fit for herbage. The plane of white lime is met on every part, as you survey the west entrance of this slack.

The whole district is basalt, with its accompaniments.

Contrary to what is usual, the inhabitants of Knockmult, which is an interior ridge of these mountains, are of great stature. The descent, on the east, is into the suburbs of Coleraine, and the soil there differs only in having the darker colour, which manures and cultivation confer.

Slack of Druim-na-Gullion, by the Bishop's-road to Lisnacruib.

I shall say nothing here, as to the improvements of Down-hill, which belongs to the topic of plantation. There is another no less interesting improvement: it is that of white cabins and reclaimed soils. This has been the effect of very munificent aid, which has, in no other thing, been more judiciously bestowed, than in the opening of lime quarries, the building of lime-kilns along the shore, and the constructing thence, toward these high regions, roads which seem rather the work of a Roman emperor, than of an Irish bishop. Roads, which penetrate the high turbaries, are, even on this account, of general utility, especially when the low country is destitute of fuel. Such is the merit of this passage. Though its middle parts are gone to ruin, yet its extremes are beneficial. I have been told, that Lord Bristol had

had intended a passage by the verge of the heights over Magilligan, an aerial, but a beautiful tract.

I know nothing more grand and diversified, than the view from the summit of Benyevenagh, whose immense masses of fallen strata in subsiding form terrace after terrace, till they die away into the sandy flats, bounded by the lough and the ocean. The narrow streight of Lough Foyle, the ruined fortresses of Green-castle, the ranges and terminations of Innishowen, are surveyed almost with a bird's-eye glance. To the west, lie the distant ridges of Donegal; to the east, the prominencies of Antrim, bounded at last by the Causeway, present themselves into the plane of the sea, one after another.

The flat expanse of Magilligan, Aghanloo, Myroe, with the valley of the Foyle, and the vale of the Roe, are extended beneath. The windings and junctions of the rivers, the cultivations of this land of Canaan, are objects of great interest. The seats and plantations of gentlemen, the villages, hamlets, and solitary cottages, excite a very diversified attention.

Ranging to the south, we find the basaltic forelands jutting boldly into the vale, and forming, one with another, a fine perspective of distances. Contrasted with this outline to the south-west, the swelling curves, which characterise the schistose mountains, occupy the horizon.

When the eye has travelled over all this, it returns and surveys, beneath the fort, a beautiful carpet of green: it is a sheep-walk, and the bleating of the flocks comes in for a share in this romantic excursion.

Somewhat to the west, in the inner part of this ridge, there is a very uncommon surface, called a *shaking quag;* it is also named the *Grey Lough.* This is over an extent of many acres. Cattle can pass through in summer, yet at every step the surface bends, whilst an undulous motion is communicated around. In the month of August, I examined it for a long time, and found the pits, which discover the water, of unfathomable depth. Those pits occur every now and again, and are all squares, (or rather paralellograms) and exactly of the size of tan-pits.

This shaking quag is surrounded by declivities, almost on every side; one is therefore at first puzzled in finding it retain its great quantity of water in the midst of the driest summer, and without apparent supply. I found its margin to be formed of stratified substances, covered with turf. This fact accounts for the retention of the water. There has, probably, been a large lake throughout this quag; which, by the interlacing roots of the aquatic plants, now compose a net-work, which supports the foot, except in places, where the movements on this surface force an opening, forming those pits, and wearing them into regular shapes.

Another

Another covered lake, of the same character, lies between the Kedy and Maycosquin.

The Bishop's road descends by Lisnacruib to the vale of the Roe; the first green lands are chiefly pasture; below them cultures and habitations. The soil, above and below the plane of the lime, is already sufficiently described.

SECT. 5. *Minerals.*

I SHALL now proceed to describe what nature has to offer below the surface, in the region of Fossils.

It has already been noticed, that the vale of the Roe parts two districts of this county, totally distinct. On the west lies the territory of schist, to the east is the country of basalt: each of these has its peculiar accompanying fossils: we shall endeavour to enumerate them concisely.

West Bank of the Roe.—Region of Schist.

Where the strata first begin to shew themselves on the side of the coast, is immediately behind the gravel banks already observed. We find in the channel of the Roe a species of flag-rock, known by the fossilists as schistose mica; of this are all the enormous

mous masses, which jut over, and confine the river, and across which it tumbles at the Dog-leap; it is greatly intermixed with white quartz, changes often, in the same quarry, into whin, granitine, gneis, flag, slate, with other varieties, as is evident at the Carrick-rocks and below the green of Mr. Boyle: it is the chief component of Loghermore, and the other mountains of the same district; it is known by its surface, frequently inclined to the colour of gold, by its waving texture, and its smooth, soft feel. Of this the mountain of Mullagh-bwee or bhui is composed, though now and then it offers a lamellated structure, imperfectly approaching to slate. Some specimens are gritty, in comparison with others of a silky softness.

At Carnain-ban, the schistose mica is in contact with blue lime-stone, which displays many of the characters of the schistose mica itself, and is therefore impure. This appears in the burn, descending into Glenrandle, which displays 30 feet of the schistose mica over the lime-stone.

At Minniach, it is in contact with granitine, which is almost as coarse in grain as pudding-stone; the same takes place in Garran-na-golpa; veins, blocks, and masses of white quartz being abundantly interspersed.

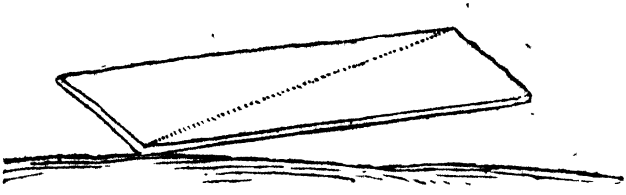
Near the opening of Burn-tolloght, the whole district abounds with it, in contact with lime, or confused

fused with granitine and gneis. It is the lowermost stratum, which I could discover in the quarries about Derry, where it lies under the whin-stone, or amorphous argillite. In short, it is to be seen in almost every quarry or stream, with innumerable varieties of contact.

Laminated Schist, (Flag.)

This, though not so common, is abundant: the finest quarry I have yet seen, is near the commencement of the new flat road, from Derry to Newtown, under the Mass-house, in the property of Mr. Major. There seems to be a law of nature, according to which this fossil never coincides, either with a perpendicular, or an horizontal line. I have remarked, that the dip of good flag, in this county, is, in general, to the north-west; I annex a drawing, which illustrates this. Only one angle of the table or flag touches the plane of the horizon; between which and the line, rising to the south, there is frequently an angle of 10 degrees, and again, between the horizontal line, and the line of the flag rising to the east, there is an angle of about 5 degrees; so that the diagonal dotted line gives the compound elevation from west to east, of about 15 degrees.

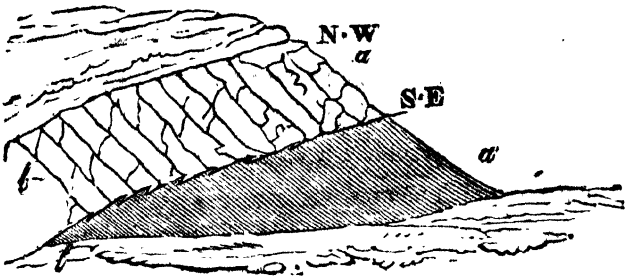
Lamellated



Lamellated Schist, (Slate).

This is very common, but, in general, the matter is soft. There is a pretty good quarry between Bond's-glen and Gossaden, past which a new road is now advancing. I have seen indications of this in Altahack-burn, in the Upper Burn-tolloght, in Learmount, and in many other places. The dip of the mean quarry, or scum of good slate, is frequently north-west; but the fossilist is liable to be puzzled, if he examines the inclination of the secondary divisions of the facets or tablets. Thus, a spectator, viewing the laminae, into which the great strata *a*. *b*. are subdivided, without having knowledge or opportunity to consider the strata distinctly by themselves, would suppose the ascent of the quarry was to be measured towards the north-west, which, in reality, is but the reclined split or lamillar chrystallization of the stratified mass, rising towards the south-east.

The



The great mountain Samhuil, (or Sawel) is composed of several varieties of schist. I traced, as I conjectured, not less than 900 perpendicular feet on its western ascent. Towards the summit, it is surmounted by shapeless whin-stone *, with blocks of quartz. This is to be discovered but in few places; for the top of this mountain is *fleshed* with spungy moss, but the top of his left shoulder, *Dart*, is bare to the *bone*. Without metaphor, the masses of hard shapeless whin, with veins and blocks of quartz, lie upon each other, heaped without order, leaving interstices, which have the appearance of being caused by some former commotions; yet, I rather think, these cavities are occasioned by the washing away of the softer parts of the rock.

In the west of the Foyle, the first stratum of Mr. Hart's quarry is shapeless whin; the next displays a tendency to flag; considerably below this, on the shore, we find soft slate, with veins of white argil.

* Not only in the basalt, but alfo in the schist country, all hard and shapeless stones are called whin-stone.

Schist

Schist is found immediately over red freestone in the Balteagh river. At Grace-teel and Faghanvale, the plane of the schist is elevated nearly 60 degrees, whilst that of the grit, underneath, is only 8 degrees S. W.; on this subject it would be tedious to particularize much more.

We have also granitine, in all its varieties, from that as coarse as pudding-stone to that of coarse whin. Some specimens of foliated and compressed granite, approaching to gneiss, with waving lines and of a red colour, are in my collection, taken from the stream of Glenrandle.

Basalt.

The controversy, which has taken place among mineralogists respecting this fossil, has given it a peculiar interest. Whether the strata, in which it lies, be the deposit from water, according to the doctrine of the Neptunist; or whether they are successive streams of melted lava, as the volcanists assert; all such discussion is, perhaps, at any place unworthy the animosity of the combating theorists, and in this work it would be a ridiculous digression.

I shall state some matters of fact, restraining, as far as possible, the too natural propensity to speculate and generalize.

Doctor

Doctor Richardson was the first who pointed out to me, that the planes of the basalt strata do not correspond with that of the horizon. I have since that discovered, that the planes of the strata descend towards the river Bann on either side. It is certain, that the white limestone appears in the valley of the Lagan, from below Belfast up to Moira, in a very elevated situation, and in a plane, which rises to the south-east, in an angle of six or seven degrees: it is equally true, that the vertical *escarpments* of the basalt forelands, in the vale of the Roe, exhibit the white limestone, with the argillaceous grit below, and the basalt above, uniformly consenting in their several planes, and rising towards the south-west, in an angle of from five to six degrees.

The plane of the limestone, which dips at Downhill under the sea and the Bann, *bassets* off near the summit of Benbradagh, and the ascent of it is in a regular plane. Examined on the north at Magilligan, it seems rising to the west; examined on the west in the vale of the Roe, it seems rising to the south; the true elevation is in the diagonal of this double elevation, and is so great, that in a diagonal line from the dip at the shore to the basset on Benbradagh, in a distance of not more than 12 miles, it has ascended not less than 1200 feet.

On

On the other side of the Bann, the lime appears along the coast beyond Portrush; but there seems to have been some second sinking of the plane, (or, as the miners express it, some *trapping* of the seam); for the lime is again sunk under the level of the shore, and does not re-appear till near Bushmills. To pursue farther the appearances of this coast, would be an improper intrusion on the department of the gentleman at present engaged in the report of the county of Antrim.

I am not clear, whether these discontinuations of the lime-stone are all owing to a *trapping*, or even to a curving of the plane; in some places this curving is evidently demonstrated by the direction of the seams and veins of the basalt, and its other accompaniments. It is also very possible, that the bed of the lime-stone may have been originally interrupted; and as the primitive shell-banks now are known to be, so may have been the discontinuation of the consequent white lime, at the time when the incumbent strata were placed over it.

This digression into the subject of lime is not unnecessary, because white lime is the most visible and uniform of all the strata, which are within the bounds of its area, either above or below; of course, the inclination of the great plane of basalt, or its relative fossils, in this lowest line of demarcation,

being

being in contact with the lime, are best discovered by such observations as these.

It is very immaterial to insist on the comparative height of the basalt hills or mountains: this speculation is lost in confusion; besides what use in ascertaining these heights, which may either have been caused, in so much as they have received an accumulation of more or less matter, at the commencement; or else, may have lost more or less, according to the durability of their materials?

I shall lay open to the reader subjects much more interesting, as I proceed in describing the interior of these strata; I have accurately noted them, whenever a quarry or natural *escarpment* displayed any thing worthy of notice.

At the Carrick-rocks, and thence to Port-stewart, all the strata are a confused mixture of rude and shapeless basalt, with veins of red ochre and steatites; and with chrystals of zeolite, some of them in masses of several pounds weight, extremely beautiful. To the interior, and almost at the boundary of the county, some of the high quarries exhibit columnar basalt, whose pillars or prisms are as accurate as those of the Causeway; some of these prisms, in the upper strata, divaricate finely, like the striæ or seams of a scallop shell.

Under Mr. Mackay's house, at Port-ne-happle, is a mass of reddish substance, of the consistence and colour

colour of Castile soap. It diffuses a sulphureous smell, when burning, turns into a purple cinder, does not effervesce with acids, and appears to be a variety of the lapis ollaris; I present the Society with a specimen.

At a quarry near Ballysally, the strata appear in the following succession:

	feet.
1. Oxide of basalt, with fragments and clay,	1
2. Stiff till, inclined to clay, -	2
3. Species of fuller's earth, snuff-coloured,	2
4. Hard basalt, -	1
5. Steatites, speckled like grey toadstone,	3
6. Basalt of unknown depth, intermixed with veins of purple and greenish toadstone, with rock tallow.	

The dip of this quarry is to the north-west.

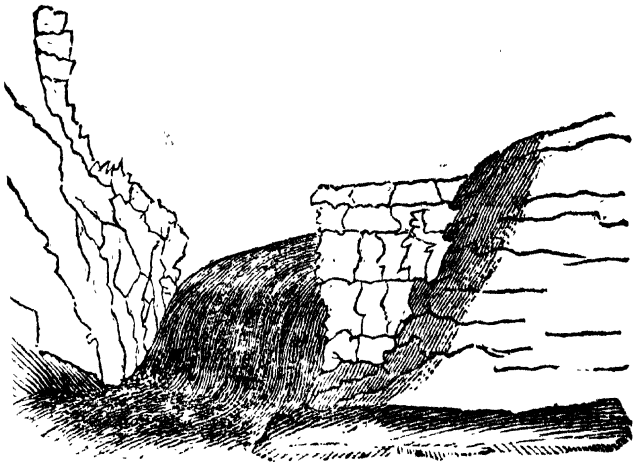
I am now come to the examination of a line of coast, not only remarkable for interesting and magnificent points of view, and still more for the abrupt and vertical presentation of the strata, composing the *crust* of the interior country.

In traversing the strand from the Bann westward, we find the stratifications of basalt submerged under the bent hills, and from the sandy beach farther inland, some eminences are discernible. There is one rock, which juts towards the sea, called the Castle; it is deserving of notice, because it appears to be a

whin

whin dyke, or *gaw:* according to the best of my observation, it penetrates through the whole mountain, re-appearing at the Largantea stream, which it crosses, and is there called Lady O'Kane's bridge; of which the annexed is a sketch.

Lady O'Cahan's Bridge.

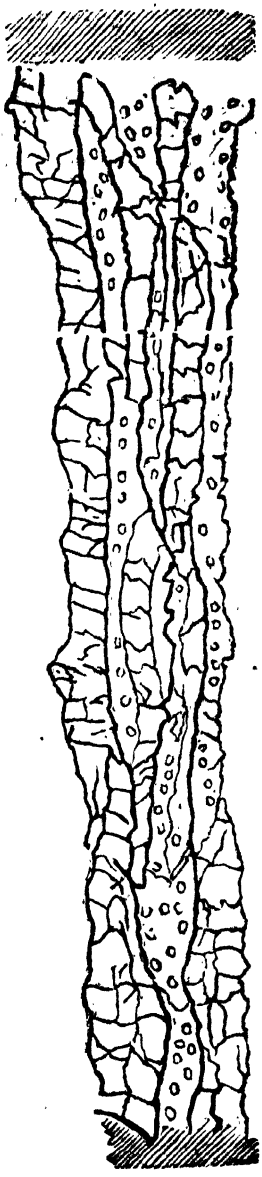


I have

I have not yet traced it farther. This rock consists of two walls, with a hollow between, and bears a great resemblance to that, described by Mr. St. Fond, on the coast of Scotland, which he took for the external walls of lava, which, after being cooled, served to conduct currents of liquid lava into the sea. This rock consists of very hard basalt, very black, and somewhat columnar, its prisms being in their vertical position; veins, and even nodules of zeolite, both very minute, appear in some of its cavities.

The strata of ochre, trapp, steatites, and basalts, are alternated with regularity in many situations more to the south-west; yet in many also, they are intermixed in a more confused manner.

I have marked the angle, in which a vein of trapp seems wedged into a stratum of basalt, which vein, as it is advanced and thickened from this angle, branches again, so as to encompass smaller strata of pure basalt.



Basalt, with veins of zeolitic trapp, near Down-hill.

In fact, these substances seem to have almost imperceptible degrees of approach and distinction. The ochre, with zeolite in spath, becomes coarser grained, and approaches to trapp, whilst trapp, whose zeolite is not much concentrated, assumes a finer blend, and approaches to coarser basalt.

Again, another difference seems to consist in the state of the iron, which in the basalt is metallic, in the trapp oxidescent, and in the ochre oxide; steatite also, where the magnesia is in larger proportion, on account perhaps of imperfect blend, has not unfrequently its zeolite concentrated in spath, and thereby presents a resemblance to trapp. Its grain, however, is much softer, the silica being overpowered by the magnesia; it leaves a polish, when pared with the knife, whilst that of the trapp is gritty and granular.

It appears, therefore, that in places, where the steatite has not any crystals of zeolite, the relatives of this latter substance may be found under the character of soap-rock, coarse and flinty veins of steatite, and ochre.

It appears also, that basalt, even when pure, through superabundance of silica, may sometimes contain conic and wedged-shaped casts of chalcedony, of which I have many specimens; but of all these substances respectively it is perhaps affirmable, that the less the abstraction of their silica out

of

of the mass, in other words, the less it is concentrated into crystalline or siliceous matter, so much the finer is the grain of that mass, and so much the more smooth and consistent its blend.

I shall only add one more remark at this place. It is the philosopher in the cabinet, who imagines boundary lines of distinction between one fossil and another. Nature, in her great elaboratory, passes by imperceptible transition from one defined production to its next ally. This is particularly true of basalt; its shadings into trapp, thence into ochre and steatites, are as gradual on one side, as on the other its mutation from coarse basalt to granitine, or from hard and finer grained into whin, and thence into flag. Nor is it without many instances, that the finely blended substance called basanite, which is involved with the basalt, dies away into the complexion of flint. I have various specimens illustrating these observations.

I subjoin an account of the succession of the strata, under which the grotto at Down-hill is formed.

	Feet.
1. Two undistinguishable strata of very confused basalt, partly columnar, more generally shivered, resting on a base of ochre, towards which there is a gradation into trapp, - -	60
2. Red ochre, somewhat branching into veins,	1
3. Small tables of basalt, mixed and alternated with earthy trapp, - - - - - - - - -	70

Feet.

4. Ochre, - - - - - - - - - - - - - - 1
5. Trapp, with basalt veins of ochreous and zeolitic matter, with masses of hard table basalt, 14
6. Trapp, with veins and strata of zeolite, blending at bottom into soft, coarse, friable basalt, 6
7. Trapp indistinctly blended with basalt, changing by shades, the midmost tabular, - - - - - 4
8. Rude, coarse basalt, with blotches and blebs of zeolite, - - - - - - - - - - - - - - 10
9. Black basalt, involving masses of trapp, the stratum declined to the west, - - - - - - 12

The altitude of the rock, on which stands the Mussunden temple, and which overjuts its base, is 168 feet.

In descending by the zig-zag path, the order of the strata is as follows:

1. Soil and rubble.
2. Amorphous basalt.
3. Indurated and coarse rock, tallow or soap-stone.
4. Steatites.
5. Basalt.
6. Trapp.
7. Tabular basalt.
8. Confused basalt with trapp, abounding in crystals of zeolite, and in soap-stone.
9. Trapp.

10. Basalt,

10. Basalt, with exsudations of a coarse, calcareous substance, somewhat approaching to steatites, and incrusting the external surfaces, a species of stalactites.
11. Reddish trapp, veined with zeolite.
12. Shivery basalt, with veins of steatites.
13. Steatites.
14. Trapp.

The section of Lord Bristol's road lays open the following successions:

1. Soil and rubble, both rust-coloured.
2. Ochreous basalt, intersected by reclined veins of olive-brown steatites, and also by veins of red ochre. All these are occasionally incrusted with the same calcareous exsudations, as are mentioned above.
3. Basalt, with veins of hard reddish ochre, which pass each other in various angles.
4. Very friable trapp, inclining to ochre.
5. Soap-stone, almost hid by the land, which is blown up this ravine.

Observations.—1st. The above-mentioned exsudation seems to arise from the calcareous matter of the zeolitic cores of the rock, which being penetrated by water, the veins of the strata yield the lime, to be carried off in a state of solution. I have found masses of calcareous spar, mixed with zeolite, in considerable masses and veins through basalt.

2nd.

2nd. The uppermost stratum basseting to the west, as viewed from the sea, in an angle of four or five degrees, is longer or shorter in dying off, or conforming to the plane of the horizon above, in proportion to its thickness; sometimes ending in an abrupt segment of the stratum, sometimes melting gradually, so as to correspond with the general level of the surfaces above.

At the second head-land of Magilligan, we find

1. Table basalt.
2. Trapp.
3. Shapeless basalt.
4. Ochreous trapp, with steatites
5. Table basalt.
6. Trapp.
7. Basalt.

The rest covered with sand and bent-hills.

	Feet.
The strata, measured with a line let down from above, were in depth - - - - - - -	138
The sand, by conjecture, - - - - - - -	64
The elevation of this perpendicular, - - -	202

The measurements of the third head are taken by the thickness of each stratum, by an instrument hereafter to be mentioned.

1. Basalt.

	Feet.
1. Basalt, basseting abruptly, - - - - -	10
2. Second stratum, which bassets about fifty yards beyond the former, to the west,	11
3. Regular stratum of red ochre, - - - -	1
4. Shapeless basalt, - - - - - - - - - -	75
5. Repetition of the red ochre, - - - - -	1
6. Friable basalt, - - - - - - - - - -	32
7. Red ochre repeated, - - - - - - -	1
8. Rude basalt, with trapp, - - - - - -	53
Land blown against the base, - - - - -	22
Total altitude of this perpendicular,	206

Observation.—In climbing to the base of the perpendicular, you encounter the appearance, at least, of danger; for, the ochre, steatites, trapp, and other mixed and soft substances, having yielded to the elements, leave the bases of the harder strata jutting over, and seemingly ready, and as certainly doomed to fall.

I shall now give a measurement, taken in the upward direction above the limestone.

	Feet.
1. In contact, intermixed with soft, reddish-brown ochre, nodules of flint, and fragments of limestone, taken together, - -	1
2. Brown, soft substance, apparently intermediate, between steatites and trapp, - -	0½
3. Shapeless basalt, - - - - - - - - - -	9
4. Trapp, abounding in zeolite, - - - - -	8
5. Shapeless basalt, - - - - - - - - - -	5
6. Do. - - - - - - - - - - - - - -	5
7. Red ochre, - - - - - - - - - - -	1
8. Confused basalt, - - - - - - - - -	50
9. Red ochre, - - - - - - - - - - -	0½
10. Loose incoherent basalt, - - - - - -	20
11. Trapp, - - - - - - - - - - - -	10
12. Brown ochre, - - - - - - - - - -	0½
13. Confused and table basalt, - - - - -	20
14. Incoherent basalt, - - - - - - - -	9
15. Compact basalt, (the basset irregular,) about	40
Total above the lime, - - - - -	178½

Observations. — 1. Sometimes it is basalt, sometimes trapp, or any other of the accompanying strata, which bassets, just as they respectively reach to the summit, in advancing westward with an ascending plane.

2. The medium, in contact with the limestone and basalt, is a jumble of reddish ochre, soft, brownish matter, including nodules of flint simply, or in masses

of

of nodules agglutinated. The flint has no mark of calcination, but is shivery, and shattered in several places; it even contains shells, though immediately in contact. I have several specimens from various contacts in my collection.

3. To a spectator standing below, it may seem as if the strata sometimes had an inclination different from that, which has been mentioned. This happens, when the face of the strata retires inward, and is only a deception of sight, which those, acquainted with the rules of perspective, will easily understand.

4. It sometimes happens, that the western termination of a stratum, which comes to basset in its term, does not exhibit its boundary by any perpendicular line, but dies away almost in a horizontal line. I remarked this in the cases of those strata, which are of the softer materials: their jutting and angular extremes have gradually yielded to the elements, and thus have softened down into a plane.

Observations on Mont Salut.

This house was formerly the resort of fashionable invalids; it was built by a subscription, under the patronage of Miss Tompkins, a beauty of the last century. The intention was to combine sea-bathing and goat's whey with (what is no less salutary to the convalescent) gay society.

The

The avenue, though in itself a steep ascent, brings you only to the foot of the mountain behind: the next acclivity is of rocky pasturage, formerly the browsing of the goat, and now but a scanty bite for the native cow. This rocky matter found so low is an object, which must be accounted for. On the further side, after topping it, we find a deep ravine, which separates it from the next ascent. In fact, the whole of this mass is one of those kinds of avalanches, already noticed as torn away from the original strata above.

The escarpment of the stratified mountain is encumbered, near its base, by the rocks, which have tumbled from the precipice: the strata, above this heap of ruins, are subjoined.

	Feet.
1. Basalt, which bassets at top, - - - - - -	15
2. Trapp, - - - - - - - - - - - - - - -	16
3. Basalt, - - - - - - - - - - - - - - -	5
4. The same, but divided by a loam, - - - -	10
5. Trapp, - - - - - - - - - - - - - - -	6
6. Basalt, - - - - - - - - - - - - - - -	20
Total of the vertical section, - - - -	72
Masses of tumbled rock and rubble, - - - -	180
From the bottom of the glen to the level of the house, - - - - - - - - - - - - - -	140
From the house, to the level of the sea, about	100
Total height of the mountain, - - - -	492

It

It appears then that, from the last measurement, in a distance not exceeding two miles, the range of the summit has gained, in elevation towards the west, 286 feet.

All these sunk terraces have the plane of their strata *reclined* against the original mountain; that is to say, in sinking, their bases have been shoved beyond their perpendiculars. From this angularity of the strata arises a diversity of picture singularly delightful. It was a fine evening, when I made these observations; the sun was declined to the west, gilding the verges of the Innishowen range beyond Lough Foyle; the rays were shot almost horizontally between the sublime precipices and the fallen masses. Benyevenagh, with all his outline, seemed projected on the mellow sky. Ruined spires, fallen castles, with a thousand imaginary similitudes, delighted, pressed, and overawed the contemplative mind.

Granite.

One of the most interesting facts, in the lithology of this county, is the appearance of the granite, of all grains, blends, and consistencies, emerging from beneath the basalt mountain of Sliabh-gallan. I had long ago conjectured, that a close inspection would discover not only the places, but also the circumstances, in which these very different fossils, the basalt

basalt and schist, are separated. I had not any idea, that granite would be found among the neighbouring substances; because, both in the county of Down, and in all the other parts of this county, the flag first occurs, and afterwards the granite; the one changing to the other by gradations almost imperceptible. On the contrary, under Carn-daisey and Tinteagh, the rivulet discovers granite in the first instance, emerging from beneath one hundred feet of reddish, argillaceous grit, similar to that generally found under basalt. The angle, in which the granite bassets, is the same as that of the plane of the basalt above, both being to the south-west, and nearly of seven degrees. I present the Society with specimens from this remarkable spot.

In the river of Lissane, the granite is of various figures; the main bed of the quarry rises to the south-west, in an angle of twenty degrees.

Limestone.

Having made so frequent mention of the white limestone, it remains only to say, that it might be found every where from the sea to Benbradagh. It is covered at Woodtown; the countryman draws it thither from the shore by painful tracks, and he burns it just over a concealed quarry of limestone: the same thing is true of Stradreagh and of Donald's-

hill.

hill. I have made this known to as many of the laborious cultivators, as I found ignorant on this subject to their cost.

Mr. Hamilton traces this fossil, and the basalt, to the east of Sliabhgallan; which seems the more unaccountable, considering the very conspicuous section of white limestone, near the highest of that mountain.

The most remarkable cavern on the coast is in the white limestone; it is called the Robber's cave, and contains apartments, where a large banditti very lately lay concealed, with a considerable booty.

This, like all the rest on the coast, has the plane of its strata accurately defined by lines of flinty nodules; the cavern is formed by the inclination towards each other of two somewhat vertical sections of the strata. These lean against each other in an acute angle, resembling the letter A. There are no stalactites from this cavern, though it drips from the top; nor are there stalagmites, though the water falls on the floor. I thought this remarkable.

There is a quarry at the Leck, in front of the Kedy foreland. It lies under hard shapeless basalt, and is mixed with very hard flint; in one piece of which flint I found an impression of a cockle shell. The limestone is in some veins so crumbling, and in other places so soft, as to be in great use as a manure, without burning.

When

When great terraces have slipt down, as near Benyevenagh and elsewhere, then the plane of the limestone in those terraces is, of course, brought lower. For example, above Mr. O'Sheil's house there are three successive planes of limestone, because there is an equal number of terraces, one sunk below the other.

In order to judge of the places in the interior, where limestone might be sought—1st. view the angle of the ascent, as seen from the west, that is, its elevation to the south: then view that of its elevation to the west, as seen from the north. The intersection of these measurements will be in the plane of the limestone. Upon this principle, I venture to say there is lime in Mr. Jackson's property, and on the dip, through which the Bishop's road runs, and thence through Lisnagruib and Stradreagh.

I think also it might be found in many dips on the rear of the mountain, towards the valley of the Bann, where it is greatly wanted. Some flag limestone, as in Desertmartin, passes under our basalts; I believe it might be found above Maghera, on the east of Carntogher.

I have remarked the appearance of the white limestone in the neighbourhood of Spring-hill. I confess myself very undecided as to this phenomenon. There are two things, which may be conjectured. Either the plane of limestone has been disparted

disparted by some convulsion, or else the intermediate parts of the plane having been originally continued, from the face of the quarries below to the face of the quarries above, this intermediate part has been carried away; an effect, which might appear the less improbable, if we supposed this intermediate part to have been of softer materials than those, which have stood firm. There is some likelihood to countenance this last idea; for, the planes of all the fossils below seem to tally with those above. I cannot assert this to be always the fact; it is only reported so far as I could observe. The plane of these strata rises to the south-west, in an angle of about five degrees.

Blue Limestone.

It is impossible to trace this. It appears in the schistose quarries, intermixed with many varieties of the flag, but most commonly in contact with schistose mica.

There was a fine quarry opened at the deer-park, near Newtown Limavady, which rose in laminae, fit for many architectural purposes: it is now closed. Blue limestone is found near Dungiven, so low as the mossy bottoms. It is found nearer the mountains, not far from the bridge of Tamna-arran, at Clun-

tagaren,

tagaren, and Burnvary; it is of a fine texture, resembling coarse marble. At Desertmartin also there is excellent limestone, in flags of a reddish colour, which lies also very low. Is it improbable, that these are all one plane, which passes under the basalt, and basseting from beneath the gritty strata has been detected in those places?

In the Ballynullans there is abundance of limestone. In these wild regions, where turf is plenty, and gunpowder scarce, it is customary to split the rock by burning a large fire over the part to be afterwards raised. Even here this process is a lazy one, and more expensive than that of the wedge and crow.

The mountain of Altahoney seems half calcareous: it is very full of white calcareous spar, which the natives take to be a silver mine. It is excellent in some parts for tomb-stones, window-stools, &c. I took large cubes of martial pyrites out of some flags of this fine lime-stone.

One of the most plentiful and convenient quarries is at Ballyartan, on the Fahan; the vein of this limestone pervades Sliabh-cark; and I think the east section of that hill would, if naked, discover two great calcareous strata, at wide intervals; one below, on the level of the stream; the other above, on the summit. By observing the planes of these, perhaps much more might be found.

It

It would be tedious to mention every smaller quarry: there is a great one lately opened in Muff-glen, another above Fahan-vale. I venture to say, that the intervening lands of the Chapter have abundance, if some pains were taken to trace the strata. Let the reader consult the map for further appearances of this fossil.

Sandstone.

Mention of the soft argillaceous grit has occurred so often, as to render a repetition useless.

I conceive, from the best of my present acquaintance with this fossil, that it is universally below the basalt, and is occasionally intermingled with the schist. We find it more or less fit for building in the lower levels, as along the Largantea, the Castle, and the Balteagh rivers.

The reader will, it is hoped, think that not an ill-spent time, in which he follows me in one or two excursions, painfully made by myself to discover the materials, on which the great mountains of basalt are supported.

Ascent of the Lyn-burn to the water-fall of Stradreagh.

Under the bridge of Dirtagh, this stream crosses the Coleraine road, shortly after which, joining the Curley river, its banks discover the same strata of soft grit, as are already described.

I propose to detail the ascent from this bridge upwards, as affording a very clear exposition of the strata, on which the basalt is ultimately incumbent.

From the bridge of Dirtagh to the grazing park of Lisnagruib, is an ascent of about 100 feet perpendicular. Of this the entire is of red argillaceous grit, with cross veins of matter, in grain and consistence nearly similar, except that the colour is of a bluish grey.

At the commencement of the park, the channel of the Lyn is a deep ravine; the succession of strata are exhibited in the following order:

	feet.
1. After the commencement of the park, red soft grit, - - -	20
2. Greenish blue grit, sometimes effervesces,	1

3. Black

feet.

3. Black slate, with dark argillaceous matter, exhibiting impressions of muscle shells; the whole mass bituminous, including a species of inflammable *cra-coal*: when dry, an efflorescence appears on the surface of the section, probably sulphate of alumine, - - - 7
4. Bluish clay, inclined to marle, - 5
5. White lime, resting on a green marle, like substance which does not effervesce, - 6
6. Ochreous trapp, softer, as it is in contact with the limestone, occasionally resting on nodules of flint, one of which contains shells; the mass is confused with basalt, shapeless, tabular, and semi-columnar, over which is the water-fall, 50

Along the banks of this stream I found stalactites of limestone, in porous masses; in other places, amianthus and mountain leather.

The ascent of the Balteagh is covered with rubble, until the level of the glebe. It begins here to discover the strata, over which it runs. The first is grit of a soft texture, and frequently endeavouring at a lamellated figure. It contains a considerable deal of calcareous matter, so much as to be valuable as a manure. We find it interspersed with fragments of quartz and hard schist, from the size of

sand to that of a bean. Over the surfaces of the lamellated parts there is diffused a polish of mica, which gives it a distant resemblance to schistose mica.

Higher up, on the bank below the church, a quarry of sandstone has been opened. It is excellent for building.

The plane of the strata conforms to the general rule, rising to the south-west, in an angle of about five degrees.

The stones of this quarry separate into cubes, and parallelopipeds, with other figures, which approach to some of the schistose cristallisations; and, in fact, the bed of the river upward produces these substances, which may be called the connection between flag and freestone, until, at Mr. Boyle's green, tables of compact flag are encountered, approaching, both as to grain, and as to the rudely columnar appearance, to that coarser kind of basalt, which has its alliance with granitine. This stratum rests on a vein of quartz, four inches thick, and this again on schistose mica, which is in knotty and waving lines, and which contains specks of quartz and feldspar; that this last matter rests upon the grit is most probable: I could not, however, discover the contact, on account of the rubble.

There is a continual succession of soft gritty strata, one placed over another, parallel to the plane of the limestone in Donald's hill.

The

The quarry of Alknover, near Dungiven, is of the finest quality: the colour is bright tawney, not unlike that of the Portland stone; many of our best buildings are from this quarry. But lying quite inland, and not convenient to the road, its stones are not had without great expence. It is wrought into window-stools, quoin-stones, grinding-stones, &c. at one shilling per cubic foot; it has been carried to Derry, to Down-hill, and even to Caledon.

Examined, as a fossilist would desire, it would exhibit small crumbles of quartz, with sand of the same; the cement siliceous. The strata rise to south-west, along with those of the schist, by which it seems to be completely involved, and according to the laws of which it is laminated in irregular parallelopipeds, measuring, in general, ten feet by nine. The longest dimension of these rises to the south, the lesser dimension to the west. I have seen shafts of pillars eleven feet from this quarry.

I believe, that the same plane of grit is extended from the Balteagh river, under the schist, to that of Fahan-vale, Graceteel, &c. The sandstone in these places would be excellent, only that its iron is in too great a quantity, and too much oxygenized, on which account the colour is that of a rusty red. I have mentioned this before.

Under Sliabh-gallan, and above Moneymore, there is a quarry of reddish freestone. It is very like

like that of Fahan-vale; and I think it is connected with it under the harder strata.

Coal.

There has not any yet been discovered, which deserves notice. Lord Bristol had it searched for in Magilligan, at Tyrcrevin-burn, and in Aghanloo, at Ballycarten. I apprehend the seam, which was pierced in those trials, is the continuation of the veins of *cra-coal*, mentioned as appearing in the stream of the Lynn. It also appears in Ballymaglin. My indefatigable fellow labourer, Mr. Donald Stewart, saw these. I cannot, however, agree with him, that this seam is worth exploring; because, by following it under the mountain, you would, as it occurs to me, only continue in the same worthless vein, without piercing into any better. It is likely, that the *sutur-brand* vein of coal, found by Mr. Gregg near Dunluce, is the same vein as this. Both lie under the basalt and the lime, without any considerable intervention.

It is under the vast interval of argillaceous sandstones, that coal will one day be found. But the places to search are in those inland regions, where the sandstone rises towards the surface.

At Fahan-vale, at Graceteel, or above Dungiven, coal might be looked for with more success, than in a seam, which lies so near to the basalt.

Ballycastle

Ballycastle colliery is under grit, which is beneath the white limestone. If ever we find coal in great quantities, I venture to conjecture, that the dip of our seam will be in a direction opposite to that of Ballycastle.

Iron.

This is in great abundance throughout this county, either in an ochreous state, or mixed with manganese. It is nearly in a metallic state, in the lands of Mr. Jackson, over Ballyhacket, where it caused the compass to vary, and even to dip in a manner, which greatly surprised me, till I recollected the cause. Iron is found nearly in a metallic state, also, in many of our basalt quarries; I have found it in the softer stones employed for making roads, involucrated with softer folds of trapp, and the interior nucleus being almost pure metal.

In a mixed state, with manganese, called bog-ore or woad, it is abundant in the mountains near Glenrandle, and about Listress.

The base of Sawel is an immense mass of martial pyrites mingled with schist; and in the neighbourhood of all our mountain streams, which issue from bogs, I have found large mounds of iron in the character of yellow ochre. To the abundance of this metal in the peat moss is owing the red colour of the

the ashes, which are so heavy as to keep in heaps even in a breeze of wind.

This metal was formerly smelted in this county, at a place called the Forge to this day, on the site of which Mr. Henderson has a bleaching machinery, near Castle Dawson. The mine was in Sliabh-gallan, and the person, who conducted the works at that time, was agent to the Drapers' company. The speculation was unsuccessful.

I present the Society with a specimen of excellent iron ore with manganese, from Sliabh-gallan; it is abundant. Might it not be worked with success, by charring the hard mountain turf, which lies convenient to the mines?

For the magnetic variations in the county of Londonderry, see Appendix, No. I.

Copper and lead are found in this county, in small veins; but nothing worth mention has yet occurred.

Gold.

In Boat's Natural History of Ireland we find it reported, that "out of a certain rivulet in Nether Tyrone, (which is now that upper part of the county of Derry, subject to the ecclesiastical jurisdiction of the primacy) called Iniola, the which, rising in the mountain Slew-gallan, and passing by the village of

Maghary

Maghary (a mistake) falleth into the north-west corner of Lough-neagh, close to the place where the river Ban cometh out of it, a person had gathered one drachm of pure gold, concluding thereby, that in the aforesaid mountain rich gold mines do lie hid."

I have several specimens of quartz containing thin leaf of gold: these are found in the surface, and are, as I believe, adventitious. I do not think, that gold is found in basalt mountains, unless at the base, where the schist and quartz basset.

Quartz, Flint, and Crystals.

The two former of these fossils are so common, that I shall only make one observation, which relates to them both. The siliceous, or flinty matter, like the calcareous, or lime, has two distinct appearances, which denote the regions, of which they are the natives.

The silica and the schist country is in the character of quartz, and the lime of the same country is bluish and laminated. In the basalt countries, the silica is in the character of flint and petrosilex, and the lime white and abundant in marine exuviæ. Earth, quartz, and flint are of various tinges. The former sometimes clear, yellow, brownish, reddish, purple, &c.; the latter horn-coloured, purple, brownish-black

black; &c. Flint has sometimes marine impressions, the quartz none. I would ask the geologist, whether or not these distinctive characters do not suggest the idea, that the schist region is produced from the utter dissolution and reintegration of the basalt and its accompaniments?

As to crystals, these are various. Zeolite in rose-cut surfaces, in points, and in thistle-down, all beautiful, are common in basalt. In flag lime stone are white and yellow calcareous spath, in a variety of figures.

In the regions of schist, exclusively, we find the rock crystal. The finest of them are in Muldonach, Mullaghash, and in the other flag mountains near Learmount; these greatly resemble Kerry stone. I am informed by my friend, Major M'Causland, that the lapidary, who cut several of them for him, esteemed them harder than the Kerry stone. As to size, they are found from the weight of one ounce, to that of twelve. In shape, they are truncated prisms of six sides and six facets.

SECT. 6. *Water.*

THERE is an idea, that the river Bann has a quality injurious to vegetation, and that thence its banks, when they are overflowed, derive their sterility.

This

This quality is coupled, by those who remark it, with the petrifying quality attributed to the lough, out of which it flows.

I rather think the banks of this river, naturally sterile, continue so, because they receive no deposits of vegetative loam, which other streams are used to confer; and I attribute this to the slowness of the current of the Bann on this side the lough; and also to its having deposited in the lough all these fecundatory particles, with which it might have been charged, when rushing with sudden swells from the high districts.

As to the petrifying quality of the lake, it strikes me, that this is a deceptive appearance. At another time I may take occasion to detail my reasons; I shall only say here, that the *soils around the lake* are abundant in such petrified wood, as the *lake alone* has been supposed to produce. The petrifactions of the lake also are bitumenous, calcareous, and siliceous; they exhibit not merely wood, but marine exuviae. The fossil, called petrified rush, is a true coralite, and is the same as chiefly composes the lime quarry of Benburb, at the distance of several miles from any border of Lough Neagh.

We have observed, that the basset of all the fossils on each side of the Bann rises to the south, that is, towards Lough Neagh. I think that the lake, if drained, would allow us to discover strata concealed,

by

by their dipping in towards the more northern parts; therefore, I suppose, it is mechanically, not chemically, that the waters act, when they offer these matters to view.

The varieties of calcareous and bitumenated matters, which are found in the countries abounding in coal, have been often observed: now, the pits of Coal-island are in the neighbourhood, and slip below the level of the lough; what then is the improbability, that similarly bitumenated and calcareous matters are not the effect of the quartz of this water, but only laid bare by the action of its waves?

The iron, or chalybeate springs are very common. There is one very remarkable at the lower Bann, near the Cranagh.

In all the mountains, composed of pyritic schist, the streamlets shew a strong impregnation with iron. In a gravel bank, near Learmont, I tasted water from a spring powerfully impregnated. Nothing is more common than exsudations of reddish and galetenous appearance from springs, and from the banks of streams.

Even in Myroe, the farms of Ballihendry are rendered unfertile by the quantity of iron spas. In other places, the water of this district is not fit for drinking; but this arises either from its having passed through peat-moss, or, as is the case in Carrick-muddle, from its having attracted the marine salts through the loose sand

sand, in the periods when the tides rise near to the level of the wells.

In Magilligan, the farmers dig in the lowest dells, especially where the sea star-grass grows. Sometimes they go down eight feet. They sometimes filter it through sand, in a strainer; but the water, which is impregnated with salt and iron, cannot be greatly remedied by an operation merely mechanical.

The reader will find, in the subjoined tables and observations, some interesting information, for which I once more acknowledge my obligations to Dr. Patterson.

"*Experiments on the Temperature of different Springs in the City of Londonderry, made with Fahrenheit's Thermometer, in the Years* 1788 *and* 1789.

Year.	Month.	Denomination of Springs.	Max.	Min.
1788.	April and May	1 Bishop-street, called Town-pump,	46¼	45¾
		2 Pump in the Bishop's-garden,	—	44¾
		3 Spring on the west strand,	51½	—
		4 Old Spa-well	46	—
		5 Rivulet near town, on the west strand,	51	—
1789.	April	6 Pump in Eddy's-lane,	47⅓	—
	August	Pump in Bishop's garden,	47⅗	—

Spring,

Spring, 1783, like the present spring, was cold; there was snow in April; and there were frequent keen and fresh breezes from the north and north-west points."

Experiments.

On spa, pump, and spring-waters in the city and vicinity of Londonderry, made in May, 1802.

"Experiment 1.—The vessels, in which the waters were tried, were of glass, $1\frac{3}{4}$ inch in diameter at the top, nearly cylindrical, and capable of containing two ounces liquid measure. The mixtures were all stirred with a glass rod, and the vessels were kept covered as long as the mixtures were on trial.

The first experiment was made on a mineral water from a spring, about two miles north-east of Derry, opening near the shore of an expansion of the river, called Rosses-bay. This water issues from a scraggy bank, about 20 feet above the level of the sea, and covered principally with stunted bushes of the brown willow, *(Salix fusca Linné)* interspersed with common weeds. The well faces the north-west, is small and shallow, much choaked with grass, and blocked up with the earth, which falls crumbling from the bank; around the well, the ground is coloured, a deep, ochry, yellow colour. The fossil substratum is slate,

slate, which appears to be of a good quality, and has aleady produced some very fair ones.

The water is very limpid, not brisk, nor odorous, but communicates to the palate a pretty strong mineral flavour.

The heat of the spring, when the water was taken up, was 8½° by a spirit thermometer, on a scale graduated according to Dr. Hale's, equal to about 43° of Fahrenheit. The same thermometer, in the air, was 14°, equal to 49° of Fahrenheit.

Before subjecting the water to the tests, the barometer was 30.13; thermometer, Fahrenheit, in the shade, 49½; hygrometer, De Luc, 33½. *Clause* 1. To two ounces of this mineral water, four drops of Prussian alkali were gradually added, and with the fourth drop a blue colour evidently struck, which, with two more drops, became of a fine bicetinct. *Clause* 2. To the same quantity of water, from 100 drops to two drachms of tincture of galls were added, which occasioned a brown tinge, heightening in proportion to the quantity of the tincture, and growing still of a more inky hue, as the time of standing was prolonged. *Clause* 3. A piece of silver, after remaining immersed in the water 36 hours, was not in the smallest degree discoloured.

Experiment 2.—Barometer 30.23; thermometer in the shade, 44½; hygrometer 26½. *Clause* 1. In adding 20 drops of spirituous solution of soap to two ounces

ounces of Eddy's-lane pump-water, a curdly disposition was instantly displayed. *Clause* 2. By mixing ½ ounce of lime-water with 1½ ounce of this pump-water, a milky, or pearly-white coloured fluid was immediately produced. *Clause* 3. In two ounces of the water were let fall four or five small crystals of the saccharine acid, and the fluid became gradually filled with narrow white clouds, or striae. *Clause* 4. Into two ounces of the water were introduced sixty drops of highly rectified spirit of wine, but there occurred no alteration, different from what happens in mixing spirits and pure water on common occasions. *Clause* 5. To two ounces of the water, were added ten drops of lixive, or lye of tartar, and with the second drop coagula began to appear, which, at the conclusion, were distinct and heavy. *Clause* 6. With two ounces of the water were mixed 100 drops of the tincture of turnsol, but there was not any change produced.

On standing nearly 24 hours, the mixture with lime-water exhibited a thin pellicle, and pretty copious white deposition, both of them rough to the touch, and of a calcareous taste. An imperfect pellicle appeared on the surface of the mixture with the lye of tartar, and at the bottom there was a moderate white sediment, both resembling, in feel and flavour, those that took place with the lime-water; and with both tests, a crust formed on the

sides

sides of the glasses. On the top of the saccharine crystals a very copious white sediment formed, which was rough and calcareous to the touch and taste; the decanted fluid betrayed no tokens of acidity with the tincture of turnsol. When this pump-water was boiled with solution of soap, and with lye of tartar, it testified dispositions the same, but not so strong, as when cold.

This water is perfectly limpid, is inodorous, and exhibits a small degree of sparkling appearance, more, indeed, than the preceeding spa.

Experiment 3.—Barometer 30.21.—thermometer in the shade, $42\frac{1}{4}$.—hygrometer $31\frac{3}{4}$.

Clause 1. Lime-water added to Bishop-street pump-water, called the town-pump, occasioned a milky appearance. *Clause* 2. Twelve drops of lixive of tartar caused a considerable milkiness, which commenced from the descent of the second drop, and the whiteness was greater than that produced by the lime-water. *Clause* 3. In adding 30 drops of solution of soap, the fluid instantly began to curdle. *Clause* 4. Eighty drops of tincture of Brazil-wood occasioned no other change, than that of communicating a dilute reddish hue, from the colour of the tincture. *Clause* 5. On the introduction of saccharine crystals, plumous clouds soon began to appear, but not so copious nor so general as in the second experiment. *Clause* 6. Thirty drops of Prussian alkali

being instilled, no alteration ensued, save a dilute tinge of the reagent's colour, which is a faint amber hue.

After standing 48 hours, the fluid subjected to the test of lime-water had a pellicle on the surface, and to the bottom of the glass fell a white sediment; the pellicle was thicker than that on Eddy's-lane water, but the sediment was less, and felt smoother to the finger and to the tongue. The sediment effervesced with strong colourless sulphuric acid. The deposit caused by the lixive of tartar was smaller than that with the lime-water, but effervesced more briskly with sulphuric acid, continuing to do so at least an hour. The deposition, occasioned by the saccharine precipitant, was less than that in the second experiment, but the sides of the glass were a good deal incrusted.

Experiment 4.—Barometer 29.97; thermometer in the shade 47°; hygrometer 29.

Clause 1st.—Lime-water, added to the pump-water at the Poor-house, instantly caused a milky turbidness, and, on stirring, a considerable separation floated through the liquid.—*Clause* 2d. Thirty drops of the lye of tartar produced a more considerable milky appearance than the preceding test, and a greater separation on stirring.—*Clause* 3d. Thirty drops of a solution of soap at once generated a coagulation, confined mostly to the surface.—*Clause* 4th. Crystals

of

of sugar gradually collected the nebulous appearances, with a more muddy stratum than in the preceding cases, directly over the crystals. *Clause* 5th. The Prussian alkali produced no change.

After standing 48 hours, the fluid, with which the lime-water had been mingled, was generally limpid, with a perfect sediment of a yellowish white colour, of a calcareous feel and taste, at the same time fermenting strongly with sulphuric acid. There was scarcely any pellicle or scum on the surface, and little or no incrustation on the side of the glass. The lixiviated water contained a curdly floating substance, with a very copious white sediment, pretty smooth to the touch, and a little alkaline to the taste; when a few drops of sulphuric acid were added, a strong effervescence arose, which continued a considerable time. A small degree of white powdery deposit followed the saccharine crystals, and a little incrustation took place on the sides of the glass.

Experiment 5.—Barometer 30.16; thermometer in the shade 57°; Hygrometer 31½.

Clause 1st.—At the time of adding lime-water to the spring-water from the west strand, no visible change took place.—*Clause* 2d. No more perceptible change occurred with the alkaline reagent than with the calcareous.—*Clause* 3d. Solution of soap caused only a slight lactescence.—*Clause* 4th. Sac-

charine acid made no alteration.—*Clause* 5th and 6th. Prussian alkali generated no colorific phenomena; nor did tincture of turnsol.

After standing 48 hours, the lime-water had caused a moderate pellicle, and a very trifling sediment. The fluid with the lye of tartar had neither pellicle nor sediment, but remained unaltered. That with the solution of soap continued uniformly lactescent, without the least coagulation. The saccharine acid induced a very slight muddiness towards the bottom of the glass.

Experiment 6.—Barometer 29.89; thermometer in the shade 66°; hygrometer $26\frac{1}{2}$.

Clause 1st.—Water from the old spa well, on the west side of the river, was not changed by Prussian alkali. *Clause* 2d. No direct alteration occurred with lye of tartar, but in 24 hours a slight pellicle formed, and an imperfect settlement appeared, with a strong incrustation on the upper parts of the glass. *Clause* 3d. Fresh infusion of galls produced neither brown nor black colour. *Clause* 4th. Solution of soap occasioned a slight degree of lactescence, even slighter than what took place in the strand spring.

Experiment 7.—Barometer 29.53; thermometer in the shade $55\frac{1}{2}$; hygrometer $30\frac{2}{3}$.

Clause 1st.—In the water of the new pump at Ferry-quay-gate, lime-water occasioned immediately a slight

a slight lactescent separation. *Clause* 2d. With lye of tartar it soon began to grow white, and shortly after to separate. *Clause* 3d. With solution of soap it quickly and strongly curdled. *Clause* 4th. On adding crystals of sugar, the usual striated flocculi soon began to gather, and a deposition to take place.

After standing 48 hours, a slight pellicle formed on the surface, with fleecy appearances in the body of the water, and at the bottom of the glass; the separation or precipitate was slightly rough to the touch, and a little calcareous to the taste, and it faintly effervesced with sulphuric acid. The lye of tartar had occasioned a copious white deposition, which felt very rough, and effervesced strongly with sulphuric acid. With the saccharine acid a good deal of white incrustation coated the lower part of the glass, and a deposit of the same appearance lay on the crystals."

Inferences.

" From the foregoing experiments, may be drawn the following deductions:—First, that the Rossesbay spring affords a pretty strong chalybeate water, capable of being converted to useful and medical purposes, especially by means of various artificial modifications, but that it will not bear carriage, nor keep

keep long, as it does not seem to contain a sufficiency of the carbonic acid to preserve the mineral in solution. Secondly, that all the pump-waters are more or less *hard*, the town-pump-water apparently least so of any; that this principle of hardness consists in a sulphat of lime, (selenite or gypsum) rather than in any other sulphat, or in any nitrat, and that they contain little loose fixible air. Thirdly, that the spring on the west strand yields a pure soft water, very fit for dietetical and culinary uses. Fourthly, that the old spa well, if ever it contained any mineral impregnation, exhibits not a trace of the kind at present, but is a tolerably soft water.

As the waters of Lough Neagh, according to M'Crea's map, wash a coast extending eight miles along the county; as water is the object immediately before us; and as the lake itself affords circumstances worthy of notice, I shall make a few observations concerning it.—This great body of water is fifteen miles long, seven broad, and covers 58,200 acres. It is only 38 feet above the sea; and its shores are mostly formed either by an inanimate strand, or marshy borders, liable to frequent floods. In this lake are only two islands; a very small one, near the mouth of the river Blackwater, and, near the Antrim side, Ram island, remarkable only for an ancient round tower.

The

The water of this lake is very pure, does not yield solid contents exceeding the proportion contained in rain water, and is esteemed excellent for bleaching linen cloth. Curry, in his Elements of bleaching, informs us, that by means of nitrat of lead he found, that Lough Neagh water contains calcareous earth, supported by carbonic acid. One property ascribed to this water, namely, the power of petrifying wood, early occupied public attention, and has frequently excited controversy among naturalists."

Navigable Rivers, &c.

The Foyle*, rising at Lough-dierg, falls into the Fin, joined at Lifford by the Mourne; it is extremely rapid, on account of its descent from the vast ranges of Donegal and Tyrone; it takes the name of Foyle after the bridge of Lifford, of the lough after Culmore, is 12 miles long, and five or six broad; the channel 14 fathoms at low water, and 10 fathoms at the entrance. Vessels turning in with a south-westerly or westerly wind, run some hazard of being stranded, in the high wind, on the beach of Magilligan. When the wind blows

* The name of the river Foyle is derived from *Frobhail*, meaning that it was sacred to the God Beal or Belus.

down

down the river, it is difficult to tack up on account of the extreme narrowness of the channel or rather gullet. Vessels sailing from Lough-swilly, with the same wind, and on the same tide, as others attempting to come out of Lough-foyle, have succeeded better. I have been informed of an instance of a vessel exactly under these circumstances, which sailed from Lough-swilly to Norway, and back to Derry, before her comrade could get out of Lough-foyle.

The Foyle river is navigable up to Derry by large vessels, and a frigate sailed to the quay at the commemoration in 1788; thence to near Lifford, lighters used to carry 20 tons. The Marquis of Abercorn, wishing to patronise his own town of Strabane, insisted on having a draw-arch in the bridge of Derry; and to second this useful intent, he had a canal cut through a moss, seven miles from Ballydonaghy to the flat under Strabane. The toll of this canal, at only 2*d*. per ton, already amounts to £605 per annum. There are frequently from 90 to 130 tons per week. The import merchandize, consisting in flax-seed, kelp, deals, iron, and wheat, is conveyed in sloops and gabbards.

The Bann river, so called from the purity of its waters, is the second river in the county; it rises from the Deer's meadow, in the northern part of the Mourne

mountains,

mountains, winds through Rathfriland to Portadown, joined by the Newry canal, and falls into Loughneagh at the ferry called Bann-foot, after a course of 30 miles.—The lake may be considered as an expanse of this river, which narrowing at Toom passes through a rugged country, formerly overgrown with wood, tumbles over several rocky obstructions, particularly that of the Salmon Leap, washes Coleraine, and proceeds to empty itself in the sea four miles below the town. The navigation of it is obstructed by some shoals, and a very dangerous bar of these could be removed or remedied; and if the rest of the river could be made navigable from the sea to Loughneagh, a compleat communication between the northern counties of Ulster would be effected.

It appears as if the course of the Bann had formerly run north direct; by some revolution among the shifting sand of the coast, it now winds to the west, and again to the east, by which means the force of the current is perhaps diminished. Between the sandy promontory, which now forms the eastern bank, and those other sand-hills on the side of Port-stewart, there exists a visible valley, covered with shells, through which the Bann formerly had its course; it is called to this day the Old Bann.

An Estimate by Mr. Whaley for making the river Bann navigable from Coleraine to the Bridge above Portglenone, having five feet water at low water, with seven Locks, sixty-six feet long within the gates, and sixteen feet in breadth.

	£.	s.	d.
To a double lock at Coleraine-leap, as there are twelve feet of a rise to go into the lock at two feet of tide, - - - - - - - -	1600	0	0
To cutting and drudging 100 perches forward above the lock into the river, thirty feet in breadth, - - - - - - - - - - - -	698	5	0
To cutting and draining Loughan island, 160 perches forward, and thirty feet in breadth,	738	3	6
To one lock at Carnroe-leap, four feet in rise,	800	0	0
To cutting and drudging 148 perches forward at ditto, thirty feet in breadth, - - - -	1037	8	0
To two locks at Bavanagher-leap, at £.1000 each, the rise ten feet, - - - - - - -	2000	0	0
To cutting and blasting at ditto, 88 perches forward of a rock, 21 feet in breadth, -	1154	0	0
Drudging ninety-four perches, at thirty feet in breadth, at Carn-hill-ford above Bavanaghan-leap, - - - - - - - - - - -	462	0	0
To a double lock at Portna-leap, 18 feet in rise, - - - - - - - - - - - - - - -	2000	0	0
To cutting and drudging three hundred yards forward at ditto, thirty feet in breadth above and below the lock, - - - - -	499	10	0
	£.10989	6	6

Carried

	£.	s.	d.
Carried forward, - - - - - - -	£.10989	6	6
To cutting, drudging, and blasting from 150 yards above the lock, 217 perches forward, and twenty-one feet in breadth, - - - -	1751	11	0
To drudging a ford, above Portglenone-bridge, five perches forward, and thirty feet in breadth, - - - - - - - - -	200	0	0
To four barges, at £.240 each, - - - -	960	0	0
To planks, wheel-barrows, crow irons, pile planks, blasting tools, &c. &c. &c. necessary for rhe work, - - - - - - - -	1400	0	0
Total amount, - -	£.15300	17	6

The river, which is third in consequence, is the Roe. It is so named on account of the muddy colour of its torrent; hence, Myr-roe, or the mirey flat of the Roe. This river rises east of Moneynieeny in Glenshane; after its entrance into the lower countries, it receives the tributes of the Owan-beg, and shortly after the Owan-more; farther on, it is increased on the opposite side by the Gelvan-water, and next to this by the Balteagh river; thenceforth it receives in succession the Castle and the Curley rivers: by this time it has advanced near the flat countries of Myroe. A current, derived from so many mountain streams, must be liable to sudden and impetuous floods; and these floods, having to pass through a level and winding channel in the latter stages of their course, must be disposed, on every sudden increase,

to

to overflow the countries nearly on a level with the channel. For this reason, many hundred acres of the finest grounds are, with great difficulty, defended by embankments, and almost an equal number, for want of such embankments, remain in a state of lottery. If the farmer gets his grain off before a rising of the river, it is a prize of the first rate: otherwise, calculating the damages, which a flood brings before or after the maturing of the grain, he has no small chance for a blank. Not only the crops, but the inhabitants are in danger, in times of excessive flood; and, especially when this is accompanied by an inblowing wind, or by a spring-tide, whole families are obliged to remain in their cabins, surrounded and often filled by the water, although they have provided against accidents by the artificial mounds, on which their foundations are raised. Sometimes their cattle, but more frequently their stack-yards, are carried away by the flood. I have witnessed scenes of great distress; during fifty hours it has been doubtful, whether the inhabitants of some mud houses have been able to climb above the reach of the waters, and whether the mud cabin itself would continue. These floods, with the scarcity of turf, form a counterbalance to the many advantages of the uncommonly fertile plain of Myroe.

It remains only to mention, that the mud, carried into the lough by this river, forms many shifting banks,

banks, which hinder it from being a convenient port upon a small scale; otherwise, the channel is deep enough in high water to receive flat bottoms for two miles; and even this would be a great convenience, as to the introduction of shells and coals, both of which I think of the utmost importance to the welfare of this district.

The Fahan is the fourth river as to size. I suppose the name to be derived from *Foch-muin*, pronounced in Irish *Faughvin*, and signifying soft provender, alluding to the grass on its lower banks. Taking its rise from a quag-mire, under the rocks called the Eagle's nest, on the verge of the county, at the base of Sawel mountain, it winds onward to the west, receiving the tribute of rills and streams from the neighbouring mountains. Its course, which at Learmont is extremely winding, winds round the bases of the mountains till it opens into the district, which we may call the vale of the Fahan, traversing the hollow grounds towards Cumber, near where it receives a considerable addition from the Glenrandle river; with this increase it turns rapidly, tumbling over many rocky obstructions, and affording sites for several bleach-greens. Near Oaks, Beech-hill, and Ashbrook, its banks are spread into green levels or hoames; in almost all other places they rise abruptly, confining the vale of the river within narrow limits.

At

At Clondermot, its progress being arrested by a detached ridge of the Flag mountains, the Fahan winds suddenly to the north-east, receiving here the stream, and with it the direction of the Gubbin rivulet. The latter part of its course is gentle enough, and the country, which it passes, may be ranked with the most beautiful and fertile of our county. The Fahan is navigable for small craft scarcely one mile.

Ballyronan Port.

This port lies on the north-west corner of Lough Neagh; at present sloops of sixty tons can load and unload here. There is little export; the import consists in timber, iron, slates, coal, flax-seed, and sometimes oatmeal. The trade is all in the hands of one merchant, who has the merit of creating both the port and the trade. When the adjacent country shall arrive at the improvement, of which it is susceptible, it is easy to foresee, that this embryo port will then become a place of consequence.

CHAPTER

CHAPTER II.

AGRICULTURE.

SECTION 1, 2, 3.

Mode of Culture,—Extent of it, and of each Species of Grain sowed,—Course of Crops.

THE topic, on which we are now to treat, offers very little, which can set this country forward in an advantageous point of view. After a great deal of consideration, no better method has occurred to my mind, than that of reporting the actual state of farming, just as I have noted it in my personal inspection of various districts. Perhaps the mind receives better information, and in a manner more agreeable, by passing over a series of particulars, than by any abstract and general description, that can be offered. Impressed, myself, by this conviction, not only here, but in other parts of the work, I have presented before the reader the information, which I wished him to receive, in the order, and with the precision of local detail.

On the Antrim side of the Bann, near the sea, the sandy arable sometimes continues, during fourteen years,

years, as pasture, under the character of lea; after which the succession is,

1. Ploughed in spring, and sown with oats.
2. Ploughed in spring, dunged from the stable and cow-house without any compost. Potatoes, planted in the lazy-bed.
3. Barley.
4. Oats.
5. In chosen spots, flax.

There is no bad soil, nor very small sized fields, towards the interior of these lands; but the country is ill fenced, and no such thing as a quickset, though pretty well out of the reach of the north-western winds. I observed with satisfaction, that some tenants of Mr. Crombie's had taken advantage of the changes of soil, from stiff bottoms to light swells, and had begun composts of each to transfer to its opposite. They were drawing sea-wrack, which, with soils and dung, was put in layers.

This manure is used either on stubble or lea; the potatoes are watery, and of no great increase.

Towards Ballyreagh, the species of oats sown is blanter, and indeed through the neighbourhood the same; this country being famous for hard small seed oats, which are purchased by the farmers, who hold clay soils. In the place I mentioned last, the yield is small, seldom surpassing four to one. They use no composts. White peters are the kind of potatoe preferred

preferred for tender ground, and Red peters for clay: Scotch greys are also in use, and English reds coming in. The earliest kind are Ladies-fingers, and another bad, but very early sort, called Rookins; it is planted early on wrack, but is very watery; it is distinguishable by the weakness of its tops. The potatoe here is planted over or on the dung.

Considerable attention is paid to changing their seed from one soil to another, which is a great advantage in a farm. In one farm of forty acres, thirty were *in field* or *croft*, that is, never left out in lea. These were supplied by the cottiers with all their manures, which, with that of the owner, are drawn out and scaled in May. 1. The potatoes, planted in lazy-beds over the dung. 2. Barley. 3. Oats, nine bushels sown to the acre, yielding about seventy. 5. Flax. 6. Oats; then began anew, or else three years lea. No clover sown, on account of promiscuous flocks of sheep, which are emphatically called pirates. The same cause prevents quicks from succeeding.

The sea-wrack, gathered during the winter, is spread over soils of the same nature. When fresh, experience has proved, that the same manure is less favourable to the first and subsequent crops, when it is allowed to ferment in heaps, and is thence drawn as other manure in spring. One load to a ridge of twenty-one by six is abundant; three loads to four

such ridges of five feet is more usual. The potatoes are planted on the wrack, and spaded or, as it is called, sloughed over. The potatoes called the Scotch grey, is reckoned best for the stiffer soil; the White peter is preferred for the light ground or sand.

I extract from a report of Mr. Crombie's farming, with which I have been very politely favoured by that gentleman, the following process. The crops are generally, when ploughed out of lea, first, oats, then potatoes, after that barley, then flax, and oats again, with grass seeds or clover (white, I presume); very little wheat sown.

Mr. Crombie mentioned to me a very remarkable product from some of his fields. He sowed eight bushels to the acre, which he thinks too much. On one of these acres (Scottish) he kept an account of the yield, and found it 46 stooks, which yielded 42 bushels of oats.

Some of the best grounds are cropped as follows: 1. Potatoes, planted on the lea. 2. Oats. 3. Potatoes on manure. 4. Barley. 5. Oats.

Sir George Hill, as I am informed, after copious liming, obtained good crops of potatoes, barley, and clover: this last he sold at the rate of fifteen pounds per acre for the first crop, and of nearly the half for the second. It is generally believed, that wheat will

not

not succeed near the river; it is said to be injured by what is called the Bann-damp.

At the fishery of the Cranagh, I observed plentiful top-dressing of lime; near the same place, I observed a management of this manure rather unusual. The lime being spread on old lea early in winter, ridges were marked out for potatoes: the contents from the trenches were cast over the lime, in which state the ground remained till the following spring: potatoes were then *kibbed* in over these; a little manure being drawn, the whole was trenched up, and afterwards shoveled as the potatoes rose.

Mr. Curtis, of Ballysally, follows this process. Having prepared a compost of dung with the scouring of ditches and various other earths, first he ploughs, then draws on the manure; if his own quantity is insufficient, he gives land for the poor inhabitants of Coleraine, on which they draw their own dung, and have the benefit of the crop gratis. The rotation is, 1. Potatoes. 2. Barley; no clover till this year, 1801. 3. Oats; sometimes grass.

Around Coleraine, on the nicer soils, a lucrative kind of farming is certainly pursued. There is a mode of letting out ground in good heart, for the poor to put their little gathering of manure; for the scraping together of which they are very industrious: for this purpose, land of the best quality lets at four guineas per acre ready ploughed. The succession

then is, barley, with grass seeds; or else, 1. Barley. 2. Oats. 3. Oats or flax.

Mr. Hartridge sows wheat in the town-parks. Mr. Lyle has been a very active cultivator in turnips and wheat. I learned from the latter gentleman, that wheat does not succeed near the Bann; it mildews, and this he thinks owing to the damp exhalations from the river and low grounds.

There is, without doubt, some judgment, and a great deal of neatness, in the management of some of the fields adjacent to the town, especially when the soil invites it by the fertility of its disposition; and this is chiefly in the approach from the shore of Ballyaghran. Yet, in the cold and stiff grounds towards Spital-hill and Port-rush, the fences are naked mounds, and the surface is disgraced with rushes, fogging, and a beggarly cropping of oats instead of grasses and clover.

From Mr. Curtis Hempill, who lives near Camus, on the Bann, I learned the following account of the product of farming. On his lea ground, he sows from eight to nine bushels, which seldom yield more than four bolls per acre, each boll containing twelve bushels. On his potatoe ground, he *kibs* at the rate of forty bushels, and has in return not more than twelve or thirteen bolls.

The succession is barley, flax, oats. His lea grounds, or, as they are called, out-fields, are ploughed

ploughed two years in succession for oats, and are left two years in succession for lea. Fields thus alternated are said to be, "two in and two out."

On the west of the Bann, near the Ban-mouth, the usual process is, after lying in lea for two years, 1. Oats. 2. Manure for barley. 3. Potatoes, without further manure; the land not ploughed till spring. 4. Flax or oats. The soil is loamy, inclining to sand, and, of course, is by this process overrun with weeds, which are borage, cotton weed, and red eyebright.

Some rye is sown in the sandy grounds on both sides of the Bann; for the culture of which, see what follows on this topic in Magilligan.

On the more clayey grounds of Freehall, the succession is, 1. On lea of two or three years, oats; if wet, it is trenched. 2. Manure and potatoes; part of the manure sandy shells. 3. Barley. 4. Oats or flax; then lea for two years.

On the light oxide or *deaf-land;* 1. Oats. 2. Potatoes. 3. Oats. 4. Flax; and then in lea three years. In such light ground only we assent to the Georgic;

Nec nulla interea est inaratæ gratia terræ.

The succession on the loamy hoames of the little stream, through the mountainous townland of Ballyhacket in Dunboe, is worthy of note. This soil has never been out of culture, during the memory of its oldest inhabitant, or of their forefathers. The management

nagement is, 1. Potatoes, with manure. 2. Oats. 3. Oats. 4. Flax; then commence again.

In the same high lands (Ballywyddick), on the ninth of August, I found the patches of meadow still unripe. The plants, intended for hay, were yellow-rattle, eye-bright, all-heal, spurge, spurrey, some meadow-sweet, sparrow-weed; to these were associated some small portion of good grasses, namely, dogtail and agrostis alba. In one of these hills, a patch of ground was reserved for grazing, which lay among the crops, that is, all in one field, potatoes, oats, and flax. This patch was of the first year, and was overspread with mare's-tail, buttercup, dog's-daisey, rag-weed, and tall oat-grass. No barley sown in these high exposures.

In Magilligan the spaded ridge is sometimes eight feet broad, which is preferred to a narrower, on account of the dryness of the soil. It is usual to plant forty bushels of potatoes to an acre in such ground; the yield is about eight to one, that is, about 320 bushels; after which is sown, 2. barley; formerly this was sown on *two fur*, that is, twice ploughed, first in July, then in May, now only once, on account of the light soil. 3. Oats. 4. Flax. 5. If strong enough, oats. The only manure here is from the stable and cow-house; there is a better at hand, the stiff clay marle, of which there is no knowledge, of course no use. The out-field, or that part, which

is

is occasionally left to pasture for two or three years, is ploughed for oats twice in succession.

In seeding it is usual to give of oats near seven bushels, which in a dry year is scarce enough, yielding from two to five bolls; of barley, four bushels, yielding from three to five bolls: on the *two-furred* or twice-ploughed they sowed less, because it stooled the better; but then it ran out the sooner. Of flax, four bushels, yielding 120 stooks, value one shilling per stook. Rye is sown on the barrenest sands; three bushels sown yield fifteen. If after potatoes, in the same bad sand produced by manure of wrack, then rye will yield thirty bushels, and no succeeding crop.

Formerly rye was greatly cultivated; it sold from eleven shillings to thirteen shillings per bushel; five bushels of new threshed was the barrel, four bushels of old grain was the same. The chief purchasers were the mountaineers of Ballynaschreen: they came in spring, after their own provender was exhausted, and returned with sacks full, carried on horseback in droves. The farmer, if he failed of this market, was obliged to sell cheap; otherwise he kept it up. For some years this vent has greatly diminished, which is owing to the increased cultivation, in mountainous tracts, of the invaluable potatoe; consequently, the rye is on the declin[illegible]. I understand, that some distillers are again encouraging the growth of rye, which

is

is mixed with the malt to increase the yield, without being subject to the duty.

On the white sand of Magilligan the sea-wrack is spread, and the apple potatoe planted is found less watery than other sorts. The general manner, and the most approved, of using wrack is in compost mixed with dung, rich earth, and moss. One hundred acres might be covered in this district. But if spread, as is usual by the poor on the sand, without being thrown into compost, it *burns* the ground, which is not found to be the case in stiff or wet soils. There is no country better adapted for grass, than some parts now under a bad tillage; but the great population, especially of the poor, attracted by the turbary, renders it more necessary to provide food and fodder. Accordingly, potatoes and oats are objects of the first necessity; barley and its straw are not so useful, though perhaps, when together, a more lucrative yield.

In Myroe, by far the most skilful and enterprising farmer is the Rev. Mr. M'Causland. This is easily perceived by the superior condition of his stack-yard and hovels, and the quantity of their contents.

In that prime requisite, so sadly neglected in other places, Mr. M'Causland has shewn an excellent example; I speak of ditches. It is gratifying to view the fences, with which even the common out-fields of his farm are defended from cattle, and from the wind.

wind. The mound of his fence is generally six feet high, and in some places ten feet, planted below with sallow, in the middle with quick, and hedged with broom on the top.

His fields are laid out regularly, in contents of from five to eight acres, nearly square; I think, however, an oblong shape might be preferred. If the long side was towards the prevalent storm of the north-west, would it not be profitable, as to shelter, and as to the lessening the number of windings, when ploughing; and also by diminishing the quantity of head-ridges, which are trodden, much to their detriment, in stiff clays?

On that part of the farm, which joins the tide-mark, Mr. M'Causland has completed an embankment of great solidity. It is setting the example, in a species of enterprize, which (it is to be hoped) will one day confer many thousand acres on the arable contents of the county. The tide, with an in-blowing storm, sometimes rises near six feet, and the surge is dashed near nine feet. Mr. M'Causland has, therefore, made his embankment above nine feet in height, and in breadth fifteen feet at the base, and two feet on the summit. The sods, of which it is composed, are three feet in length, the end turned out; the interior is filled with clay, which is tightly rammed by an heavy pounder.

By

By this bank, five acres of that, which was, like the rest of the beach, an ouzy marsh, poached, and affording pasture only on its tummocks, is now good arable. After embankment, the treatment was, as follows: 1. Three years in grazing. 2. One year oats, without manure. 3. Oats without grass-seed. 4. Hay, a full crop of natural *fiorin*, or joint grass. When I examined it, in June, 1801, it was in its seventh year for meadow, and I observed, in the district parts, perennial clover, trifolium, and white clover, trifolium repens, beginning to spread over the surface.

To cure those low parts, which are scalded by wet, Mr. M'Causland draws vegetable loam, (provincially called *Mothu-earth*) from the inner bank; the opening of which bank shewed the soils to consist of inches.

1. Dark rich loam, - - - - - - 10
2. Tough blue marly clay, - - - 16
3. Shelly marle, intermixed with ouze. 24

There was nothing further discoverable. By this improvement, a further one is effected, which is the saving of all the low grounds in the interior from occasional overflooding.

Mr. M'Causland pursues the following rotations:

1. Potatoes, spaded in beds, with compost of shells, bog, marle, and sea-wrack, well digested and often turned.

2. Barley,

2. Barley, with clover: if the land is too rich, then without clover.
3. Barley with clover.
4. Clover, cut for house feeding.
5. Clover left for pasture.
6. On strongest sort, barley; otherwise oats.
7. Oats.

The same gentleman has the merit of having been the first, who taught the farmers to make composts; 20 years ago, no such thing was known. It is only 25 years, since red clover was introduced by a farmer, named Patten, who lived at Aughnergal.

An acre of ground manured, roughed, and harrowed, ready for setting potatoes, is let at six guineas. Mr. M'Causland has meadows, which do not often come into his rotations.

Mr. William Moody's farm is just without the demarcation of the fertile soil. It is partly bog on the surface, under which is white quartzy sand, and under that, stiff blue clay; beneath which last, he finds sand of a reddish hue, impregnated with iron ore and springs. The better soil of his farm is a stiff crofting ground. The compost, which he uses, is of scourings of ditches, with shells, to which is added the manure of the stable and cow-house.

Mr. C. of Oatlands, has enclosed and quicked his fields in a very good stile; his soil is excellent, being blue marly clay, with shelly marle, in

beds

beds of about a foot thick, and, for the most part, alternated to an unknown depth. Clover grows well on this soil. I observed Mr. C.'s cattle fed on the grazing field with clover, which, by changing the place of feeding, manured the field without any trouble.

Mr. Patten, of Krindle, remarked to me, that the land of Myroe, being itself made up of marle and shells, in great proportion to the clay, is sometimes *burned* up, by laying over too large a quantity of its own scourings; the medicine for which is, to potatoe with fresh dung unmixed. By this application, the caustic quality of the shells &c. is neutralized.

In general, through Myroe, potatoes are planted in lazy beds, and, in general, the farms are divided into what is called out-field and in-field. In the management of the former, which is always the stiffest part of the farm, we often find it first shelled, and left to lea for two years, the quantity of shells about 50 barrels per acre; then broken up with 1. oats, 2. oats, then left out under weeds.

In-field, which is called crofting-ground, consists of the nicer and more convenient parts of the farm; in the neighbourhood of the shore it is managed in the following manner. Composts being made at the fall of the year with scourings, sea-wrack, and dung, they plough down this with the stubble in November;

in

in April, this is plougehd up, and then 1. Barley. 2. After ploughing in the stubble, before winter, it is untouched till near May, when it is harrowed; the ridges are then marked with a plough, potatoes are kibbed in, and spaded over; when these rise to the size of buttons, they are shoveled over. Then follows, 3. barley with only one ploughing 4. Oats, one ploughing. 5. Flax or oats. Several farmers prefer sowing the flax on barley-leave, that is, after barley, but it is then too coarse for almost any market, but that of Derry.

Mr. Martin, of Culmore, has divided his farm into large fields, well fenced and quicked; his out-field is under the usual management, except in this, that he lays down his second crop of oats with grasses and white clover. As to his in-field, it is distinguished into croft and hoaming land, which latter is the same as the loaming flats, near the banks of rivers. Mr. Martin sows red clover with his barley, and raises a good deal of wheat.

The farmer next to Mr. M'Causland, deserving of that denomination, is in my own parish. I mean Mr. Jacob Forsayth, whose management is excellent. This very spirited farmer is not discouraged by a very precarious tenure—he fallows several acres annually of his stiff grounds, limes on the surface, and reaps abundant crops. His crofting ground is usually divided into seven dales, and these are put into this rotation, 1. Potatoes on compost, sometimes

on

in beds spaded, sometimes after kibbing the *shough* ploughed, and the mold shoveled; this done twice, at least; sometimes also drilled with the plough. 2. Wheat. 3. Barley with clover. 4. Clover cut for house feeding. 5. Barley. 6. Oats. 7. Flax.

Sic quoque mutatis requiescunt foetibus arva.

A farmer, in the same town, had the following remarkable succession, which shews the excellence of the soil, which is a loamy gravel. 1. Potatoes on dung. 2. Barley with clover. 3. Clover for cutting. 4. Clover, partly cut, partly grazed. 5. Potatoes without manure. 6. Barley. 7. Clover for cutting. 8. Clover, partly cut. 9. Potatoes with a very little manure. 10. Barley. 11. Clover, in which state it was, 1800.

The general practice in Aghanloo, and through this neighbourhood, is that of kibbing; and there are two plans; first, after having ploughed down the manure, to kib in the potatoes; 2. to kib the potatoe into the ground, after being ploughed and harrowed, and then to cut the turf before the manure is laid on; this is done just as the plants begin to appear, and then the shough is either spaded and shoveled once, or ploughed and shoveled twice.

In the town-land of Drumbane, when the fuel is brought down the mountain precipices, in winding tracks, by slide-cars, the crofting grounds, after being exhausted, are ploughed in April; the potatoes are kibbed

kibbed in after harrowing; after this the farmer takes all hands to cut his turf. By the time this is over, the potatoes begin to appear; the dung is then drawn over in slide-cars, and the ridges are spaded. Next comes on the attention to the turf; after which the shoveling of the potatoes, the dragging and drawing home fuel, consumes near three months. The rotation is 1. Potatoes. 2. Barley. 3. Oats. 4. Flax. 5. Oats or wheat (it is wonderful how wheat succeeds after flax); in good grounds they proceed to 6. Oats; that is, if no wheat. It is needless to panegyrise ground, which can stand against such bad farming.

If it is worth attention, I shall mention, that my own method of planting potatoes is thus. I plough in the stubble as soon as possible after harvest; this I turn up in spring; when lightly harrowed, the manure is laid on, and as quick as possible it is turned in by cross-ploughing. When the field is harrowed thoroughly, the drills are opened, at the distance of 20 inches; and to make them exact, I have a lath of that length nailed across the beam of the plough, which serves to guide the ploughman. Having prepared every thing in the field, I employ about two boys or girls to each man or woman, whom I set to the work of dropping the seed in the intervals of six inches. As soon as the drill is planted, the plough turns in the mold, and so covers the plants. I generally plant two acres in the interval between breakfast

fast and dinner. The number of men or women employed for this purpose is six, with two boys or girls each.

When the plants appear, I pass a light double mold-board-plough, with a single horse, between the drills, by which the plants receive a light covering. After this, while the ground is damp, on which the displaced mold lay, I have a well-steeled light plough entered, which passes up and down, raising fresh mold. This, at a proper time, is again laid up to the plants by the molding plough, and the process repeated as often as I please; generally thrice.

If weeds appear, which however are not troublesome in stiff soils like mine, the cutting plough is passed close to the drill, by which the greatest part of the weeds are thrown into the bottom of the trench-way, and there, after rotting, are thrown up as before-mentioned.

Before the potatoe-apples are quite fallen, that is, when the stems are yet between a green and faded colour, they are cut off by a scythe, and carried to the vacant head and foot ridges, where they are made up into heaps, a layer of soil being thrown between every layer of the tops, in which state they remain to be spread on the same ground, which thus comes in with the rest of the field for the next crop.

On the day when I mean to take out my potatoes, I engage a boy or girl for every man; and as I can take

take out my crop in a few days, I wait for good weather. My double molding plough comes again into office with two horses; it is entered into the drill just under the plants, and at one passage it throws out every potatoe to the right or left. The boy runs on with his basket, and gathers the most disengaged potatoes; the man or woman comes after with a crooked hand-fork, and takes up the remaining potatoes, and occasionally, when he suspects one to be covered, rakes the ground with his hand-fork. It is to be observed, that the plough will take out in an hour as much as 12 men with boys will gather in four; of course, the ploughing is intermitted, according to the number of hands. In this process, the plough opens only every second drill, lest the mold and potatoes might be confused. After these alternate drills are thus gathered, the remainders are taken out as before. I have never had my crop so little cut, nor so cleanly gathered, as since I practised this plan, which is now four years.

Six drills, each of which would require 40 minutes for a good digger, attended by a boy to clear, I have had opened by my plough going, at the usual rate, in four minutes and two seconds. This was noted, because it was done to gratify the curiosity of gentlemen, who took the trouble to examine the proceeding.

The town-land of Stradreagh, in the high region, for the most part above the plane of the lime, is composed of that loose soil already described: the soil is not more miserable than are its inhabitants, nor the inhabitants more wretched than their course of culture. Though rest and composts of a binding quality would tend to improve this district, and though there lies immediately under it a bed of stiff marle, yet is it kept in continual rotations, such as—1st. Potatoes with dung, and some little addition of scouring and scraping.—2. Potatoes without dung or any manure; these are kibbed into the former ridge.—3. Oats, a crop abounding in straw, but deficient in grain.—4. Flax.—5. Sometimes oats, and then begin again.—How much better a system for these over-rated cottiers, (for they deserve not the title of tenants) if they could be brought to lay down with white clover, to top-dress with stiff marle, and to use the roller instead of the too frequent torture of the harrow? But potatoes are the staff of life, and the loom and the wheel pay for the misfortunes of the plough.

Mr. Huey, of Newtown, planted on the fog of old mountain pasturage several acres of potatoes.

At Streeve 5½ guineas per acre, English measure, were given in the year 1800 for the liberty of taking one crop from old lea. The seed was at the rate of four guineas per boll of 12 bushels; the following year being

being plentiful, the person, who undertook this, had a loss. Four guineas was supposed to be the value of the second crop. The higher lands are easily run out, and then are covered with coltsfoot, (tussilago petasites) cow-grass, (ranunculus campestris) and couch-grass, (avena-elatior).

The bottoms seem inexhaustible. Two crops of wheat in succession, with three of oats, seem not yet to have rendered them less productive.

Mr. M'Causland is a very eminent farmer in his own demesne; he uses the plough of the county of Louth, which is heavy, but throws up the ridge and hints in a masterly style. It requires four horses, and is of course not fit for a country of small farms.

I have not been favoured with any remarkable rotations of this farm, but if I may judge by my own observation, this gentleman's passion for fallowing and wheat is sometimes indulged without sufficient consideration.

I shall next mention a very enterprising scheme of farming by Mr. M'Causland, of Daisy-hill. In the neighbourhood of the mountain, close to the road leading from Newtown to Garvagh, 12 acres of rotten or incohesive bog were first drained and piped, (that is, the open drain was lined with land stones, and covered with flat stones); the next part of the process was the paring of the rough sward tolerably even. No grass was seen, except on the co-

vering of the drains. The expence of all this was four guineas per acre, that is, 48 guineas. In 1799 the product sold for 50 guineas; the former value was only £11. 5s.

Another enterprize is still better as to success. Nine and a half acres of cold rushy moss, in the same district, were for the most part burned over in summer, trenched into ridges in the autumn and winter, in spring sown with oats. 2. A compost of clay being thrown over it, a crop of potatoes was attempted, which did not succeed well. 3. Oats. 4. Fallowed, then covered with the rubble of the soft lime of the Leck quarry; the cost not less than £.150. 5. Wheat, crop worth £.200. 6. Fallow, winter and summer. 7. Wheat, a fine appearance, July 1802. Barley will not succeed in those cold climatures.

At Tully-draymond Mr. Henry Morrell makes composts of earths, shells, lime, kelp-dross, with dung. In dry grounds he kibbs potatoes; in cold spouty soil, which is to be brought in, he prefers to plant them over the manure. The quantity of seed is about 20 bushels per acre: the yield of the same about 250 bushels. In succession he sows, 2d. barley; 3d. oats; 4th. flax; 5th. oats, with grass-seeds. I have this gentleman's authority for saying, that grass succeeds better with oats than with

with flax; the only fact, which gives any confirmation to the observation of Virgil,

"Urit enim lini campum seges."

In the same town-land, lime used to be brought from the quarry of the Deer-park at 11*d.* per barrel, burned on the farm, where the turf was plenty. From 40 to 60 barrels were laid on, according to the coldness of the soil; and then, 1st. oats; 2d. oats; 3d. oats; then out for pasture. This was the succession after first bringing in, and the sequel was in and out, two years each.

The crofting ground is managed by composts of shells with earth; the shells cost 10*d.* for drawing, and 6½*d.* at the shore per barrel. The land is ploughed in spring, harrowed, and then the compost being scaled over, dung being next spread, the potatoes are kibbed in and trenched over. 2d. Barley. 3d. Oats, or flax. It is reckoned bad farming to take a fourth crop. A great deal of rough ground is annually brought in.

The town-parks of Newtown are well formed; the soil, being a nice gravel, requires great recruit of vegetable manures; and this it receives plentifully. A good deal of white clover is sown, and the pasturage of it is redundant.

In fields a little remote, especially where there is a variety of matter for compost, such as moss and clay,

in

in bottoms convenient for laying on the gravel swells, it may be no unproductive plan to grow wheat; and yet, whoever thinks on the value of feeding crops in the vicinity of a town, will rather wish to see them clothed with those plants, which go to the supply of the dairy. This reflection occurred to me the more forcibly, when I met the wives of tradesmen and labourers coming far into the country to purchase butter-milk, which was carried painfully enough in cans and jars.

I think this suggestion will be adopted the rather, when the proprietors of town-parks perceive, that by cropping light grounds too often they become overspread with weeds. The value of grain may decline; but the necessity for milk to the laborious poor cannot fluctuate. Besides, is there no gratifying, no inducing motive in the reflection, that the poor little inmates of the suburb cottages shed fewer tears of hunger, and are less pallid, by means of the supplies of milk, which the pasturage system may advantageously afford?

At Streeve, the dwelling of Mrs. M'Causland, the soil is either of a nice loamy gravel on the swells, or of a deep clayey loam in the bottoms; these lands have of late been annually let out for the crop. One field of old lea on the upper grounds was rented in the year 1801, at five guineas and a half for the single crop, free of tithe and cess; the scarcity of the former seasons encouraged the countrymen to offer any rent.

For

For the bottom lands £3. is offered. Wheat has grown two years successively, and the productive powers seem undiminished. This is recruited by the annual supplies of mud, conveyed in the two large streams, the Curley and the Castle river, by which it is environed: after all this cropping, the natural *fiorin* grass is spreading a rich mantle of green. I shall mention on succession of crops, 1st. oats—2d. wheat—3d. flax—4th. wheat—5th. oats—6th. trenched wheat.—This last was covered, when just green, last winter with the flood, so long as to be supposed perished; when the water withdrew, it seemed incrusted by a deposit of red sand; notwithstanding, it was this autumn prodigiously luxuriant. It is now in good oats, (1802.)

I have the following account from Mr. Boyne, manager for Conolly M'Causland, Esq.

Fruit-hill farm contains about 191 acres, all arable ground, divided nearly as follows, viz.

	A.	*R.*	*P.*
Meadow ground, - -	50	0	0
Grazing annually, about -	50	0	0
Ploughed annually for wheat, barley, oats, flax, and potatoes, upon an average, - -	60	0	0
Garden, - - -	2	2	0
Orchard, - - -	1	2	0
Plantations, glen, stack-yard, yards, avenues, and lanes, about -	27	0	0
	191	0	0

No

No great variety of soils occurs in Fruit-hill farm; it is mostly heavy, or clayey loam, and hoaming grounds, with very little gravel or sandy soils. It is favourable for all grain; chiefly, oats. It is a fine pasture farm, and casts up a great deal of grass. All the late planted trees are doing well, except Scotch fir; I ascribe the cause to the badness of the plant when planted, and not to the soil: all others are in a thriving state, and doing well.

An industrious and enterprizing tenant of Mr. M'Causland's, Fruit-hill, named Smith, has manured several acres with the ridding or clearing of the Leck quarry; the marle is over the lime; seventy loads of this, above one barrel to an acre—he draws shells also, two and a half barrels to the load, 50 to 60 barrels on an acre lea. The ground is chiefly stiff clay, extending from the Curley river towards the Kedy.

Among the neat farmers of the town-parks of Newtown Limevady, I may instance Mr. Richard Ross; he pointed out to me some acres near the Castle-bridge, consisting, as is usual, of gravel swells, with a bottom of loam beneath. Each of these soils is assisted by his process of drawing down the lighter and sharper soil, and returning up with a load of the heavy bottom soil, together with peat and scourings, all found in the bottoms; under this management his

cropping

cropping is, 1st. potatoes; 2d. ditto; 3d. wheat; 4th. barley; 5th. excellent oats; 6th. after a little more top-dressing of the same sort, wheat; and, after all this succession of exhausting crops, the present appearance of a wheat crop is most promising (Nov. 1801). In a field near the town I saw potatoes of an excellent appearance drilled; these are manured with compost of soapers waste, made from American ashes, ploughed down in February, and drilled in May. Mr. Ross sows clover frequently to succeed barley: he sowed two acres, English measure, with less by two stone than two barrels of barley.

What is said of this tract will give the highest opinion of its fertility: the sharp hills will indeed devour much manure, unless aided or satiated by plenteous doses of the clayey loam. Notwithstanding their fertility and nearness to the town, the fields remain for the most part without quicks; the fences are only a bare mound, until you come to the demesnes of Streeve and Fruit-hill.

The upper part of Mr. Sterling's farm is a continuation of the curving gravel banks; the lower part is chiefly of the same nature as Myroe; that is, ouze, shells, marle, and, in some places, the surface is moss. From this last, the meadows are manured with turf ashes. Mr. Sterling has besides a good resource for manures, of which he avails himself, by digging pits and drains in the flood-mark, into which

he

the sea-weed is drifted, and, when rotten, is thence annually drawn forth to aid the composts. The cropping is, 1st. potatoes kibbed and spaded on compost; 2d. barley, frequently with clover; 3d. oats; 4th. oats, or flax; and then, 5th. oats.—Mr. Sterling is a very attentive and active farmer: his meadows are top-dressed, sometimes with stuff from the sea. He has built a store for wheat near the gut, which serves as a port for small craft, below Walworth. This trade is over, and few other than shell-boats frequent this shore.

Near the village of Ballykelly is good land, fit for meadow, rented at four guineas per acre, the soil above the wood as bad as that below is excellent.

At Walworth, the Right Hon. Mr. Beresford is paying considerable attention to husbandry. I saw one instance of what may be called the horticulture of the field. It was the management of a fine crop of cellery in a mossy bottom, entirely by the plough.

Mr. Beresford's farm may contain, in all, about 300 acres; of this perhaps 200 are under wood.

There is a great facility of watering meadows here. At present, the stream is not only useless, but highly destructive, by overflowing the bottoms, and tearing away the soil, and leaving it covered with gravel and stones. All for want of embankment.

I saw

I saw here a wheel-plough at work with four bullocks, yoked by the neck, and led by two horses. The task, which it had to perform, was stubborn enough; it was the ploughing of potatoe land, which had been brought into lazy beds from stiff ouze, matted with old roots of rushes; the intention was to sow wheat; it was, I think, early in November. I venture to predict, however, that Mr. Beresford will one day discard this machine; and I presume to suggest, that a light, well constructed plough, well steeled, and sharply feathered, would perform the work, which was then in process, with two stout horses, and these would move with much greater quickness than the team composed, in part, of bullocks; besides, it was observable, that this team did not get well into the side ridges, next the fences, nor into the corners of the head ridges; so that, without a considerable use of the spade, these parts would furnish a wilderness of noxious weeds, which would tend to pollute any more delicate plants. Mr. Ross, of Mulkeeragh, is one of our best practical farmers. He reclaims rough grounds, of a mossy surface, which he top-dresses plenteously, from composts made of ashes of burnt peat, the peat-moss itself, and quick lime; these are turned over once or twice. Mr. Ross has an extensive farm, with great varieties of soil and surface; he grows wheat, barley, oats, &c. his crops of each are among the best of our county.

In

In Fahan-vale, the farms are, in size, about 30 acres. The soil is good, consisting on the swell of gravel or croft. The composts are judiciously composed of clay, moss, and shells, all of which are convenient. The cropping is as follows: potatoes kibbed into the ploughed down compost, or else set on the compost spread on the surface, for the purpose of making the manure *go far*; in this way the potatoes are said not to be so dry. The seed 25 bushels, the yield from 200 to 350. 2. Barley, seldom any clover, except at Grace-teel. 3. Oats, blanter, succeeded only sometimes by flax, which is not grown here equal to the consumption. 4. Oats without grass, and so begin again.

In the out-fields, which are of a stiff clay, the fields are divided into two portions, which are alternately cropped with blanter, two years each, the seed seven bushels. The yield, from good ground, from four to six bolls of 12 bushels. The meadows are of mossy bottoms, into which no grass-seeds are introduced; and though the streams run in plenteous idleness to the sea, there is neither irrigation, nor the intention of introducing it. Yet the streams are uncommonly numerous, and the grounds remarkably well disposed for this culture.

From Fahan-vale to Grace-teel, and thence to Mr. Major's, the farms are not differently managed from

from those in corresponding situations, and of similar sizes.

The exertions of Mr. Scott, of Willsborough, are second to none in the county. It has been already mentioned, that the evils of this gentleman's farm are chiefly moss and clay. Mr. Scott cuts off the moss for turf, with which his boats supply the city of Derry. Having left about 14 inches of the peat, his object is to bring up the rich clay, which lies beneath. For this purpose, he employed very heavy strong ploughs; these were the more necessary, in parts of the farm, where a thin stratum, intervening between the mossy and the clayey soil, was to be penetrated. This plough required six bullocks. After having broke in these surfaces, and rather imperfectly incorporated them, Mr. Scott laid on shells, to the quantities of 60, and even 120 barrels per acre, according to the stiffness and coldness of the subsoil. Under this fallow it remained one or two years, after which it was potatoed on dung in beds. The fields adjacent to the house were next year sown with oats, to which were added grass-seeds; and thenceforth it continued in meadow or pasture. Those enclosures, which were more remote, were, after being ploughed, and manured with shells, rented to farmers, either with or without a cabin: they vary from four to 20 acres; every farmer being anxious to get an addition from the

the parts, which are brought in. Mr. Scott gave grass-seeds, gratis, to industrious tenants.

Mr. Scott gives farms also to his turf-cutters, of from eight to ten acres. His boatmen have grazing, but, in general, grass is yet too scarce to supply the common labourer.

The lands, either in a reclaimed state, or marked out for the most immediate processes, are chiefly enclosed by canals, which serve to convey the turf to the shore. Of these enclosures, there are three, which contain severally 36, 48, and 53 acres.

Mr. Scott talks of himself as not being yet a farmer in minutiæ. This may be true, but, on the general scale, he confers no small benefit on the tillage of his country, who annually bestows four acres, from a state of waste, to thriving cultivation. As a planter, this gentleman will again be mentioned; mean time, we are to notice the product of his crops, which are, 1. From 12 to 14 strokes (each two bushels) of potatoes planted in beds; the yield is, 150 strokes, or 300 bushels. 2. From $3\frac{1}{2}$ strokes (that is, seven bushels) of Friesland oats, yield from 60 to 90 stooks, each near one bushel of oats. Such crops, at present, foretel immense fertility in future.

Near Mr. Scott's are several extensive farms, but I think they are rather under a relaxed management. Mr. Major, and his acting partner in the Salt-pans, have reclaimed a good deal, nearly four acres in every

two

two years. After the turf is cut away, they potatoe in dung twice in succession, making the trench of the second year, where was the middle of the preceding ridge.

In the gravel grounds, towards Derry, flax sometimes comes in for the second crop, thus: 1. Potatoes. 2. Flax. 3. Oats, but this is only in the worst swells; the usual rotation is, 1. Potatoes planted in beds. 2. Oats. 3. Flax, and if good, 4. Oats; then lea for two or three years.

I might enumerate as many farmers, as there are gentlemen, on the west of the Foyle. Mr. Hart is extremely zealous. He was planting his potatoes on dung, spread over lea ground, which had not been ploughed. His succession is barley, oats, and grass, sometimes flax.

Sir George Hill is making great exertions as a farmer, along with those, which he has exemplified very rapidly as a builder and improver. His extensive enclosures, in a great proportion, consist of stone walls. It is not to be doubted, that the farm of Brook-hall will soon be under the most improved management.

Sir Andrew Ferguson gives considerable attention to this delightful pursuit. His meadows are in good heart, with top-dressing. I observed, that he prefers the spading of potatoes, and sometimes on the lea.

During

During the partnership of Messrs. Sterling, Horner, and Dunlap, the farm of Pennyburn-mill was extremely well cultivated, and vast quantities of manure were brought, by the return of their carts, which they sent into town with the products of the mills and the farms.

Mr. Alexander made some exertions to improve his farm, and to establish a dairy: I regret, that it is not in my power to obtain the detail.

The town-parks of Derry are, in size, from three to eight acres. One can hardly speak of the occupiers of them as farmers. Mr. Young has produced vast crops of hay, by turning a stream, formerly useless, over his meadows. Other gentlemen of the city have shewn, what they would have done on a larger scale, by their efforts on a small one, and by the pleasure, which they take in conversing on those efforts. Nothing evinces, that man is naturally a tiller of the earth, more than this, that though gentlemen in trade rarely make their most lucrative speculations the topic of social conversation, yet the recital of the most trifling success in husbandry is chearfully listened to, and exultingly told. I must not omit my amiable and learned successor, in the diocesan school of Londonderry, among those, who contribute their zeal and industry to provide for the indispensible wants of their own and others families, in the character of tillers of the soil.

The

The Rev. Mr. Babington, than whom, no one has a more unwearied, and few have a more varied activity, told me, that he had cultivated onions, sometimes with success, but that the trouble was too great for any but the man who could weed and watch his own garden. Mr. Babington has a good many parks, which he has in cropping, and in meadow. One meadow produced him 17 tons of hay from three Scottish acres; the average of the same is 15 tons. One acre of early potatoes sold for £.36. These are instances of a remarkable fertility. Mr. Babington spares no cost in manures, and every such person ought to have a copious product.

Mr. Scott, of Danville, has a farm rather highly situated, the soil originally not good. His exertions in irrigating are very laudable. The Messrs. Curries also are to be ranked among the best improvers of town-parks. Mr. Wall also is pretty deeply engaged, and very skilfully employed in the pursuit of tillage.

At Mullenan, there is an air of neatness, which approaches to that of an English farmer. Clovers are sown, and the ground kept in heart.

Towards Fahan, Mr. Brown, of Clozglass, was an excellent farmer, and used to supply the city with many other products, besides great quantities of hay. Farther on, the usual management of the poor farmer is thus: the dung, being spread on the lea in

winter, is left there till spring; it is then ploughed, potatoes are kibbed in, then barley, or, if the soil is poor, oats, then oats, and lastly, flax or oats.

I observed a very slovenly method in practice around Derry. In grounds intended for potatoes, the part destined for the ridge was ploughed, while that for the fur or trench was left in its stiff and unploughed state, in which condition it was spaded over the crop, in a state resembling one huge half-dried brick.

Behen.

Mr. Knox occupies an extensive farm, and, according to the best information, which I could obtain in his absence, is pursuing the practice of agriculture with attention. I have not, however, been favoured with communications of any particular managements.

Near Dungiven, Mr. Ogilby is likely to shew a good practical example. Among his commencing enterprizes, we may reckon as no bad omen the planting of several acres of curled kale, entirely managed in drills with the plough.

I observed in the mountain parts of the same district, that the convenience of rearing cattle on rough pasturage induces so great a demand for fodder, that barley is not sown even where it might succeed.

succeed. In all the light grounds, between the mountain and the loamy parts of this vale, light-foot oats is preferred to blanter, because it yields longer straw, though not so nutritious, and because it ripens earlier, and therefore escapes the accidents of a moist immature in a late harvest.

Near the village of Dungiven, I saw a man digging potatoes after Christmas. He told me, that the scarcity having compelled him to have recourse to his crop before it was ripe, he had taken off the more forward bulbs, and returned the rest into the ridge; and that he was now taking the second crop, which was about half a bushel to the perch, 21 feet by five feet.

There are several good practical farmers; particularly the Messrs. Boyle, Mr. Hunter, and Mr. Stephenson. Their processes are not very unlike; it is chiefly potatoes with compost in beds, and spaded; barley, oats, flax, oats, with some variations of grasses, but very little clover. Meadows are mostly natural, and not in any rotation. There are exceptions as to some grounds near houses, which are laid down in grasses neatly enough.

Near Straad, which is an opening among mountains towards the Ballymullans, I found, that the usual farming of the poor man might be exemplified in the following instance.

A farm of five acres, Irish measure, which paid £4, 15*s.* rent, was in this rotation.

	A.		*£.*	*s.*	*d.*
1. Potatoes, spaded on compost of bog, scourings, and dung, - -	0½	-	1	0	0
2. Oats, partly 1st, partly 2d crop, after potatoes,	1¼	-	5	0	0
3. Flax, after oats, -	0¼	-	2	0	0
4. Lea and rough patches for pasture, the cow tethered, - - -	3	-	2	0	0
In all, -	5	producing	14	0	0

	£.	*s.*	*d.*			
Deduct the rent,	4	15	0			
Cess, - -	0	5	0			
Tithe, - -	0	4	6			
				5	4	6
There remains to support a family, -				9	15	6

And even from this is to be deducted for all misfortunes of domestic sickness, or loss of cattle, a certain something, besides the clothing of old and young. It is therefore astonishing how life is supported; and yet I assure the reader, as to the present instance, there was no filth, no famine, and no repining. But this will be accounted for—the whole family were laborious, and their breasts were cheared with that

that most delightful sunshine, a peaceful conscience, and a tender reliance on the mercy of Providence.

In parts of the Ballymullans, where lime was convenient, (turf is in abundance) after ploughing in spring, they sometimes spread the dung first, and over that some lime, then spade the potatoes; a petty farmer will have one acre of potatoes, followed by oats, then oats, then lea for two years: flax comes in for the second crop in the very poor grounds. This wild country will improve rapidly; the value of great tracts of peat-moss, with the convenience of lime, is not yet disclosed to the farmer. We find the poor man struggling with rocks, when he ought to be better employed on boggy wastes. Let the rocks be occupied by sheep; settle the labourer on the most manageable and grateful of all soils, a moss near lime and clay.

Mr. Conolly M'Causland, now settled at Learmount, is a great acquisition to this hitherto little frequented region, not only as a hospitable gentleman, but as an exact and enterprizing farmer. I saw him employed in irrigation, reclaiming, and dressing surfaces; nor will it be long till, by his management, the appearance of that charming retreat will add the air of a cultivated to that of a picturesque landscape.

Near Claudy, Mr. Alexander Ogilby is inclosing large tracts of ground, hitherto in a great measure waste,

waste, (1802); these he fences and quicks, and within the fence plants a screen of forest trees. Scotch firs in particular, planted on quick moss, seem to take root, though the surface has not even been turned. The fields are broke out of their heathy state by potatoeing in lazy beds: part of this is done with the manures gathered for themselves by Mr. Ogilby's labourers; the rest, to a considerable extent, by himself. A few years hence the traveller will be regaled with refreshing green. Mr. Ogilby intends to build on this farm, where there is a site for a new bleach-green on the Fahan. Another instance this of the inestimable benefits, which this country owes to the gentlemen in the linen trade.

The cold coarse soils are twice potatoed, the trench of the second year being taken out of the middle of the former ridge.

Mr. Ross of Cumber bestows great attention to farming. In one place he reclaimed 20 acres from a state of quagmire and bog, into that of a well irrigated meadow. The process was thus: 1st. drain and ditch; 2d. level the tummocks where heights occurred, pare off the swarth, dig down the height, then restore the swarth, with the grass upward; 3d. after this, raise the water behind, and conduct it over the surface in the usual method.

The Rev. Mr. Waddy, jun. is busily engaged in watering meadows.

Mr.

Mr. Acheson uses in compost sandy loam and bog, with kelp-dross from his bleach-house; to this he adds dung; he manures heartily, and ploughs the lea. From this management, he produces sometimes at the rate of 450 bushels of English red potatoes; in general, 420 of the red peters, and about 350 of the apple. In general, he sows blanter, except on bog, where he has tried the black oats; his flax succeeds his oats on good ground, after which he has a crop of oats with grass, and this is left in pasture or lea for three years.

This gentleman has been so much occupied in turning his active mind to the chemistry and mechanics connected with the linen trade, and also with architectural objects, that the neighbourhood has not yet derived all that is to be expected from his skill as a farmer.

Respecting the farming procedures of Beech-hill, I have it not in my power to note any thing worthy of the gentleman, who is very lately come into possession. Some future possessor will doubtless take pleasure in recording, not only Mr. Skipton Kennedy, but also the Messrs. Smith, on both sides of the river, as benefactors to the soils of their country.

At Ashbrook, composts are made of shells drawn from the water-side of Derry, the distance nearly two miles; the cost at the shore is 8*d.* per barrel only; three of these are carried at four loads, which is the work of the day, and whose cost is 4*s.*; very little

little has been used hitherto. The other components of the dung-heap are scraped from the farm yards, roads, ditches, &c.; added to these are large quantities of manure from the stable and cow-house. Mr. Ash proceeds in the following routine. 1st. Potatoes on dung, sometimes spread on the lea, and spaded; 2d. barley; 3d. oats; 4th. flax; 5th. oats; then left out for three years. This is the practice on the best land; on that of secondary quality, there are two crops of oats, with flax intervening. Little grass-seed sown; no clover, nor turnips, nor fallow. The pasturage consists of worn out lea, and coarse ground, not hitherto reclaimed: but to counterbalance this defect of farming, which no man condemns more, and, of course, no man is better prepared to improve than is Mr. Ash, I must here mention, that by far the best system of irrigation, which I have seen in the county of Derry, is practised in this gentleman's meadows.

Mr. Ash holds another farm at Gortinure, in Clondermot, where the soil is over limestone, containing eight acres, of which he mentioned what is worthy of remark. Having marked out ridges on the old lea, he dug the furrow, and scattered the contents on the ridge; oats being sown over this, the product sold for above £200, in the year 1799. It is right to mention, that the number of cavalry, then

lying

lying in Derry, enhanced the price of grain and straw.

At Brackfield, the potatoes are planted on lea, the dung being newly spread. No kibbing, no barley, no blanter, but lightfoot.

In the town-land of Listress, which lies in the track through the mountains from Ervay towards Mufflglen, I observed, that composts were made with great industry; they are composed of bog and lime. The bog is convenient; but the lime is dragged on slide-cars through difficult rut-ways from the quarries of Ballyartan. This industry is in some respects frustrated by the abominable custom of *rundale*.

I am sorry to record this species of tenure, as still existing in many places, where the leases have not lately expired. There is also another obstruction, which arises from the great population of these mountain hamlets. The few favourite acres, which first induced the settlement, are continually in crofting ground, that is, are never laid out either in grasses or lea; and the reason is, because coarse grazing can be had on the heaths, and the families, crowded together, can neither spare the potatoes, the grain, the flax, nor the fodder. They are ignorant of their own wealth, which lies in those neglected wastes of bog, which is really an inert dunghill, lavishly furnished to him, who has the skill to subdue it.

I remarked

I remarked the following succession of crops, which I believe to be nearly universal: 1. potatoes kibbed into ploughed ground, the dung drawn over, then spaded, and afterwards shoveled; 2. oats; the fodder is always too precious in a mountain town, not to give an exclusive preference of oats to barley; 3. oats; 4. flax in the best parts, otherwise oats; 5. if flax has been sown, then oats again.

In most of the hamlets on the side of Ervay, the soil is the same, but there is no kibbing. At Ballygroll, under Sliabh-buck, great exertions in the way of burning moss and reclaiming ground have been made, yet are they without any convenience of road or fences. In the times of fairs, when cattle are driven through these mountain *slacks*, their crops are liable to very vexatious trespass. This is a very reclaimable tract, and requires and deserves much more attention, than has hitherto been bestowed upon it. I think there is lime in the neighbourhood.

Near Tamna-iron, I noted a good mode of reclaiming bog. The coarse surface being laid out in ridge and furrow, as if for potatoes, the contents from the furrow, with the paring of the ridge, are burned together; the ashes are left to the following season, well covered with sods; they are then spread, potatoe sets being laid over them; all is covered from the furrow. Next year oats are sown, then oats again, after which it is left to Providence, and to the poaching

poaching of cattle, under the ill-deserved description of *leisure*. How much better one crop of oats with grass-seed, and then meadow, of which these mountains stand so much in need, and to which their soils are so well adapted? There is no liming, and very little compost, from Listress to the high land over Muff. The lime-stone is but lately found in this district.

About Ballaghy, potatoes are sometimes drilled, more commonly so, from Magherafelt towards Coagh. Composts are used, both for top-dressing and crops. The succession, in practice with Mr. Spotteswood, is,

1. Plough, kib, and trench potatoes.
2. Barley, sometimes clover, sometimes grass-seeds, mixed from hay of natural meadows.
3. Clover or meadow, two years.
1. Grazing, one or two years; break up, and then
1. Oats; if strong, then
2. Oats again, or else flax.
3. Flax, with grasses occasionally.

Mr. Spotteswood, at the Glebe, practises the half-burning of bog as a manure, (it is called *scamming*,) and as well as his brother makes a top-dressing, by leading down the clayey rubble to the mossy bottoms, and by return of cars bringing up the bog to the rubble swells; the custom of *scamming* is prevalent through the neighbourhood. The Rev. Mr. Torrens

Torrens informed me, that he had tried lime in composts made of *scammed* bog, the ashes and fresh peat being added together with it. Mr. Torrens thinks the composts, without lime, succeed better.

Mr. Spotteswood made a singular experiment of hoamed or fallow barley, cut in rows with a hook when shot; this was carried away, made into hay, and the ventilation, thus produced, saved the rest of the crop.

He has reclaimed a portion of flow-bog in the following manner. After leveling the tummocks, he earthed it in autumn, sowed a little grass-seed, ashed some, and where that has been done, it is still visible in crop. The same gentleman reclaimed, by another process. Having burned the surface, he drew the earth of rising ground on the bog, then proceeded, 1. Potatoes. 2. Oats with grass, then meadow. The native or rather congenial grasses seem to supplant that, which is usually sown, the white English grass (holcus mollis). I observed the dog-tail and avena rather predominant, and, in the wet places, carex and rush (scirpus). Mr. Spotteswood remarked very justly, that mosses, after having their surfaces altered, should not be entirely drained; but how much better is it to raise the water, so as to run over, than to stagnate under the plants?

Mr. Henderson, this year, planted 40 acres of potatoes, with manure, compost, and scourings, on the sheep-walk of the demesne of Castle-Dawson, for

the

the benevolent purpose of affording present employment and future food to the industrious poor.

At Castle-dawson, and in its vicinity, I saw no despicable instances of farming; yet, considering the fertility of the soil, it is to be hoped, that still better processes will soon be adopted.

Near the lake, towards Toom, where the soil is somewhat sandy on the surface, yet abounding in substrata of clay, and in the neighbourhood of moss, composts of these ingredients were mixed with dung. The succession then was, 1. Potatoes. 2. Barley. 3. Oats. 4. Oats or flax. No clover, because the fields are flooded by the lake in winter.

At Drumraney, near Magherafelt, the out-field is thus treated: 1. After one ploughing in spring, oats. 2. On compost, *plant* potatoes. 3. Flax. 4. Oats: little grass-seed, and no clover. I thought it strange to bring in the flax on the potatoe land; but the reason is, that the soil is light and the yarn coarse, seldom drawn to six hanks, in general only from two to four.

There are several instances of no bad cultivation about Magherafelt, particularly in the instances of the Messrs. Pattersons. Not having been so fortunate as to be favoured with any detail, I am sorry, that it is out of my power to mention them in the present edition of this work.

Mr.

Mr. Cunningham, of Spring-hill, has an excellent demesne; it produces almost all manner of crops. I remarked to Mr. Cunningham, that I saw no flax; his reply was, that the management would be very troublesome at home, and if the crop was auctioned on foot, the buyers would only be of the poorest classes, and such as he could not bring himself to press for payment, without which no payment would be had. I hope, that Mr. Cunningham will find some expedient to reconcile his interests with humanity; there is surely no better crop than flax, in a country where rents are paid by the wheel and the loom, rather than by the plough.

Mr. Millar, of Money-more, having been absent, when I had the honour to call on him, and many other engagements having, no doubt, made it inconvenient for that gentleman to furnish me with any communication; I can only say, that I very attentively noticed many of the farms of that neighbourhood. I found that Poland and blanter oats are both common in strong soils, and that light-foot is sown chiefly in the light grounds, particularly in that vale, which conducts from toward Desart-martin. The process in this tract is, 1. Oats on single fur, *i. e.* one ploughing. 2. Potatoes on compost. 3. Barley, if the soil is good enough, otherwise oats. 4. Flax, which is spun to about three hank yarn. The seeding and yield was stated to be nine bushels of oats

to

to the acre, (Irish) yielding from three to five bolls of 12 bushels—20 bushels of potatoes planted, yield from 100 to 300 bushels.

About Desart-martin, there seems to be great variety, both of soil and farming. Mr. Magee, the Rector, with his usual complaisance, accompanied me through his farm. I give some of the rotations, which he pursues; his meadows are in low bottoms, not coming into any succesion. 1. Having twice ploughed the lea, he plants, or else kibs potatoes. 2. Barley, with red clover, partly; the rest wheat; in September or October with grasses; the clover cut one year; the grasses in pasture for three years. Another succession is, 1. Oats. 2. Oats. 3. Potatoes, on manure. 4. Barley. 5. Oats. 6. Flax, after three ploughings well rolled. The remote enclosure, or out-field, is under the rotation of three *in* and three *out*. The seeding is, to an acre (Irish), eight bushels of Poland oats; from 20 to 27 bushels of potatoes; the yield very various.

The Rev. Mr. Bryan, Rector of Kilcronaghan, makes composts of moss, scourings, and lime, to which is added the manure of the stable and cow-house. His soil is rather light or *hungry*; he proceeds with 1. Potatoes in beds planted. 2. Oats, or, if a good part, then barley, and, if barley, then 3. Flax, generally with grasses. The yarn is coarse in all this country.

I have

I have to regret, that the Rev. Mr. Young, Rector of Ballynaschreen, was absent in England, when I had the pleasure to call on him. I understood from Mrs. Young, that he had taken the pains to make up a packet for me, containing his own proceedings as a farmer; knowing the intelligence of this gentleman's mind, and having seen something of his extensive farm, I should be happy to publish his practice through the vehicle of this, or a subsequent edition.

In some rugged lands, I observed the management of the poor farmer to be; 1. Oats, upon land first ploughed, then trenched, sown next, and lastly, harrowed. 2. Potatoes kibbed, the manure drawn over, the brinks of the first ridge pared, from which, and the bottom of the original trench, the crop received a spading first, and afterwards a shoveling. 3. Barley, if the soil fit, otherwise flax. I was informed, that flax will not at all succeed in such circumstances, unless the ground is in good heart; they spin very coarse yarn.

There are several very active farmers about Maghera, the Rev. Mr. Soden, Rector of the parish; Mr. Antony Forrester, who is a successful reclaimer of bog; Mr. Clarke, and several others, whose exertions I should have been happy to mention. As to the gentlemen farmers towards Coleraine and Kilrea, I understand from some, and have learned of others,

others, that there is nothing very regular in their methods. Indeed, the greatest part of this district is very ungenial; and the residents are so industriously and meritoriously engaged in the staple trade of our county, that it is rather to be wondered, how they have had time to dress their lands so well, than that they have not earned the reputation of farmers of the most advanced practice. To these gentlemen, this naked and rugged district owes every thing; and when they fail to exhibit rich carpets of *green*, they display, in its stead, a snowy mantle of *bleached linens*. The most zealous culturist will allow, that one acre of this is of a value beyond all comparison.

As to the farmers in a lower rank, I can only say, in general, that their soil is not generally such, as either they, or the reporter of this, could wish it to be. The best grounds, excepting those on the banks of rivers, seem to be in the Dupre proportion; and where the best soil is, there will be, for the greater part, the most comfortable dwellings, and the most improved cultivation.

I have now finished all the facts, which seemed interesting, from observations made throughout the county by myself. If I have faithfully reported them, I shall have the less to regret, that they were made neither without anxiety nor fatigue.

In the detail of particulars, I subjoin some general remarks.

Barley is found to succeed best on stiff ground, when it is sown on manured stubble before potatoes. There is another advantage, which is, that in the second crop potatoes may be drilled without any trouble, after a winter ploughing and a cross ploughing; then barley comes in again without fatiguing the ground.

Stiff lands are the most difficult to manage in drilling, but they are most improved by it; frequently turning molded surfaces to the air, and in every molding keeping the richest potatoes near the plant, and exposing the coldest to the weather, is surely an improved process, compared to that of the Fahan, and near Derry, where lumps of stiff clay are thrown in chinks over the plant.

The best succession of the crops now in use appears to be, 1. Barley on manure. 2. Potatoes in drill. 3. Barley with clover. 4. Clover for cutting. 5. Barley. 6. Flax. 7. Oats with grass. The general demand for barley, which is carried chiefly to private distilleries on the mountains, makes this succession very advantageous; barley is said to pay the summer's rent, and flax the winter's.

Beans were formerly grown in vast quantities, in Aghanloo and Myroe. The best account, which I can get of their being disused, is that some wet years hurt

hurt them. In stiff lands, they are an excellent preparation for barley. The farmer, already mentioned, Mr. J. Forsayth, suggested to me the following rotation, which he intends to attempt.

In autumn, lay manure in the furrows of the stubble, which plough in for winter fallow; open good deep water tables to keep all dry. In March, harrow well, and turn over the fallow; in doing which, you must not turn up the manure, but only throw aside the mold on each side; when this is done, open two nice drills in the manured part of the ridge, drop in the beans, and return the mold; let the drills be distant one foot from each other, so that each will be but six inches from the crown of the ridge; and if the ridges be well spaced, the crown of one ridge will be five feet from that of the next, and the interval between the drills will be four feet; this gives a good ventilation, both to the crop and the summer fallow; when the beans are reaped, immediately cross-plough and harrow well, to mix the manure and fallow. After which, sow wheat in light seed-furs; make deep water tables, passing the plough up and down to loosen the mold of the furrows, as we say provincially, draw a fur-whit, and fur-back, and shovel up the mold. This will give a crop, which will richly pay the rent of the fallow-year, the seed of the beans, and that of the wheat.

Turnips are little in use. I sowed nearly three acres, broad-cast, in one year, and I assure the reader, I was better tythed than any of my parishioners. It is to be hoped, that this excellent fallow-crop will become usual. The best way is, supposing there was a farming society in the county, for each member to pledge himself to sow annually a quantity proportionate to his farm, and to offer premiums to the poor farmers and cottiers for so doing. This might be extended to other crops; thus, for example, there is nothing more wanting than green feeding from December to May; the Swedish turnip, and the curled kale, are objects of the first necessity. The poor man's cow is often unable to rise on account of her wretched provender; this weakness they call being "*a-lifting*."

The following particulars of the farming near the city of Londonderry, are communicated by Dr. Patterson:

"*Potatoes.* Some allow 16 measures, or 128 stone, to plant an acre of land; but if judiciously cut, 12 measures, or 96 stone, are sufficient. An acre of good land will produce 1536 stone, which, at 3*d.* a stone, amount to £19, 4*s.*

Barley. From 12 to 14 stone are generally sown on an acre. The general produce is from 8 to 12 barrels; the latter, at 21 stone to the barrel, amount to 252 stone, which, at 13*d.* per stone, make the sum of £13 13*s.*

Oats.

Oats. Some give only 21 stone to the acre; the common rule here is 24 stone. An acre of good land will yield 240 stone of oats, which, at 10*d.* a stone, is £10. Perhaps the average value of an acre of oats, throughout this neighbourhood, would not exceed from £5, 10*s.* to £6.

Flax. Formerly, from 36 to 40 gallons of flax-seed were sown in an acre; now, only from 23 to 32 gallons. A good acre will produce 12 stooks; each stook will give 72*lb.* of clean scutched flax, amounting in all to 864*lb.* which, at 6*d.* per *lb.* is £21, 12*s.* The usual produce is one third less, and even of this it often falls short.

	£.	s.	d.
A single acre of flax-ground taken, -	4	11	0
Thirty-two gallons seed, at 18*d.* per -	2	8	0
Pulling, - - -	0	6	6
Drawing, spreading, and beetling, -	1	14	0
Scutching, - - -	2	6	7
	11	6	1
Profit from a good acre, - -	10	5	11
	21	12	0

Grazing

Grazing.

One acre and a half of good sole grass is allowed for a horse; one acre for a milch cow; one and a half to fatten a cow; about two acres for a large ox; and it is reckoned, that six cows and lambs, or six wethers, are equal to a horse.

Rotation of crops.

First; Potatoes; 2d. barley; 3d. oats. Some take a second crop of oats; then flax; then potatoes, &c. or left out. If ploughed, out of lea ground, from four to seven years old, generally two crops of oats, one crop of flax, last crop oats, then out.

Servants and labourers wages.

Servant-men get from £3 to £4 half-yearly, and are in general good workers. A labourer gets 13*d.* a day, without meat; good hands in the turf bog get 13*d.* a day, others 8*d.* In harvest, 13*d.* a day is the general rate."

Seeding in general.

The quantity generally sown is as follows:

1st. Barley, four bushels each, 40 quarts in measure, or $3\frac{1}{2}$ stone in weight; but good barley will considerably exceed in weight.

2. Wheat,

2. Wheat, 3½ bushels of 40 quarts, weighing 4½ stone each.

3. Oats, from six to eight bushels of 40 quarts, weighing three stone.

3. Potatoes, 24 bushels of 40 quarts, weighing three stone; by drilling, one fifth of the seed may be saved.

Varieties of seed.

We sow but one variety of barley, which is the Scotch, or four-rowed; it is sown in the beginning of May, and reaped in the latter end of August, or beginning of September; we reckon 70 bushels no bad yield; the price fluctuates from 10*d.* to 16*d.* per stone: in the late dearth it rose to four shillings. Two stone of barley ought to yield 20*lbs.* of meal.

Wheat. We have four varieties of this: the plain white; bearded ditto; plain red, or Dantzic; and bearded red. I esteem the third variety as the best. The yield is from six to twelve barrels; the price fluctuates from 25*s.* to 45*s.*

Oats. Very little black oats are sown even in our bogs; the brown Poland is preferred where such soil is in heart; in light grounds light-foot is preferred; blanter has long been the favourite on the good soils; latterly, Poland, or Friezland, are coming into vogue; I prefer the blanter, as to yield. The perfection of the two last kinds, is that of being early,

and

and their imperfection, that of being liable to shake. Price varies from 20*s.* to 40*s.*; in the dearth it rose to five pounds. Good oats yield 20*lbs.* of meal per bushel. It is the market price of the meal, which regulates that of the oats. According to this calculation, when a poor man buys oats on the foot, he esteems himself fortunate, if he has the straw for the price of all the labour previous to the mill, and the seeds for every subsequent expence.

The varieties of potatoes are too many, and the names too arbitrary, for enumerating. We reckon the earliest to be the pink-eyed kidney, best known as Rookeys; the next, either the white dwarf fairy, or white flat. The main crops are white peters, red peters, Scotch greys, blacks, English reds, &c.; the varieties allied to the old apple potatoe are certainly the best keepers, but not plentiful (provincially *birthy*) in the ground.

SECT. 4th.—*Use of oxen—how harnessed.*

The farmers, generally speaking, employ no bullocks. Some gentlemen prefer them, particularly in wet and boggy soils. Mr. Scott uses bullocks almost exclusively. Mr. M'Causland, of Daisy-hill, seems to have substituted mules of late years.

SECT.

SECT. 5th.—*Implements of Husbandry.*

Dicendum est et quæ sunt duris agrestibus arma,
Queis sine nec potuere seri, nec surgere messes.

VIRGIL. GEORG.

The Plough.

That in common use is of the Scottish model; the beam and the head are long and heavy. Where the natural oak is yet extant, the plough is made of it; but generally the timber of the best ploughs is ash. A worse kind is sold ready made in markets, of alder. Our farmers temper the plough by driving wedges in the mortice, which receives the beam into the steer-tree; this mortice they call the glut; it is cut longer than the tenant, and the depressing or elevating this tenant, by shifting the wedge above or below in the mortice, is termed tempering by the gluts. Is it not strange, that in a country, where mechanic ingenuity has been displayed advantageously in the machineries for the linen and cotton manufactories, the instruments for farming remain in so rude a state?

The American plough, whose head is of iron, and is in one piece with the sock, is sometimes to be seen;

seen; by making some alteration in the construction of the feather, I have the satisfaction to learn from Mr. Scott of Willsborough, that a considerable improvement is effected.

In Magilligan, the plough used in the low lands is always feathered, and the feather is kept regularly sharp; otherwise, the tough scum of sward, after the passage of the plough, would tumble back into the fur, like an elastic rope untwisting itself.

For reclaiming bogs, Mr. Scott has very heavy strong ploughs; but as the object is, to turn down the moss, and trench up the clay, the operation would require the action of two ploughs at the least: the first should throw off the moss; the second should enter deep, and mine out the clay over the former fur-slice; the first plough, again returning, should bury the moss in the deep fur, and again the trenching plough should cover that; the difficulty would lessen after the opening of each furrow.

Although I do not think, that this can be well effected in the first breaking in of difficult sub-soils, yet in mossy fields, which have been stirred to the bottom before, I do not despair of seeing it thoroughly effected. Two horses or oxen would be sufficient for the first plough; the second would require four at the least. When it is considered, that a field of mossy surface, over an unabsorbing clay, is little better than a mire; and, on the contrary, that a

surface

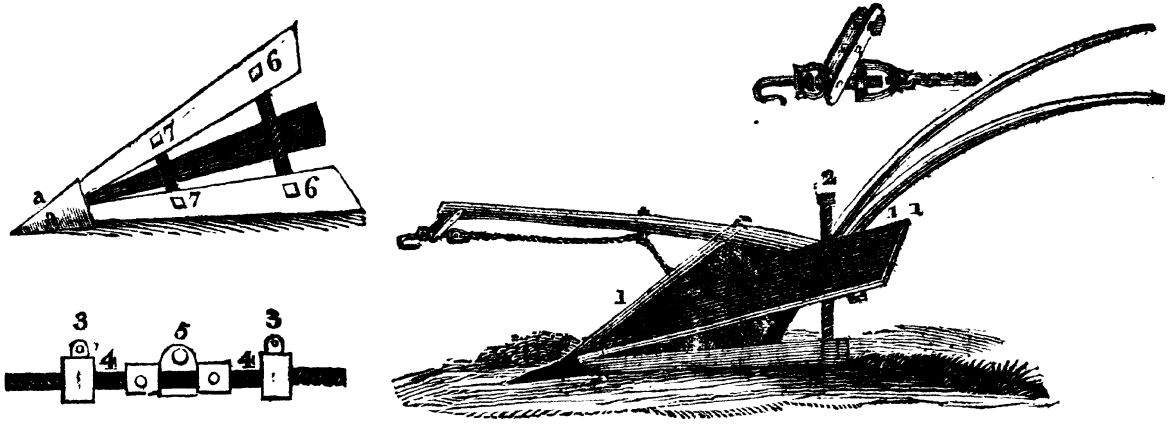
surface of fallowed clay, over a substrate of absorbing moss, is likely to be of the first quality, the expence necessary for effecting this change will probably bear no comparison to the quantum of benefit, which will be effected.

I have often thought, that a kind of hoe fastened to the hinder part of the plough-beam, which might be tempered by the foot of the ploughman, the office of which would be to pare the stubble into the fur, and out of the way of the coulter, would be a desirable improvement. Should the Society desire it, I shall have a model constructed.

As to the molding and digging double furrowing plough, which I have used for four years with great success, I shall present a drawing of it, by which the powers of the machine will be best understood.

Digging

Digging and molding Plough



1. 1. 1. The wings, or double-mold board.—2. The upright screw for raising the wings.—3. 3. Blocks morticed into the wings, these have female screws to receive the—4. 4. Male screws right and left, by which the wings are extended.—5. Block with female screw, through which the upright screw passes. The dark shading denotes the part, which is without screw itself, in order to admit the turning of the extending screws.—*a. a.* The wings and head of the plough, sun in front.—6. 6. The opening screw.—7. 7. A staunching bar.—8. Iron slipper, or sock.

The

The two molding boards of the plough are made of half-deal, the arridge planed, so as to allow of the angular junction to the ledge, which is whole deal or ash. The lower angles of the two molding boards and ledges, are first bolted loosely through the plough-head, over which the slipper, or *duck-neb sock*, is driven on; by this means, and by means of a staunching bolt (7. 7.) the whole is kept firm, and yet can be elevated or extended sufficiently; the beam is six feet; the chain, fastened below into the steer-tree, passes through a staple, and draws the tenants close to the mortices, preventing thus the strain of any part. The wings extend from 20 to 30 inches behind; they can be elevated or depressed six inches, which powers I have found to be sufficient for all purposes.

The Harrow.

In general use, we have a great harrow or brake, consisting of five bills and four sloats, with thirty heavy tines. We have also a hinge or falling harrow of lighter scantling, with six bills and four sloats, and thirty-six tines; this is not common; these are of ash; but the poor farmer has only a machine, whose bills are of alder or birch; these are tied together by rungs of the same; the tines

are

are light; it is only fit to scrape the surfaces, rendered incoherent by continual cropping.

In Myroe the soil is stiff. On this account, as well there as elsewhere, if the fur gets leave to harden, no brake will reduce it; the instrument then used is the mell, a log with a long handle; with this, urged by a strong arm, the lumps are tediously reduced.

The Wheel-car

Is little different from that in Dublin; our carrying carmen avail themselves of all improvements, and are thus good examples to the country. In every implement, the neighbourhood of Newtown is most advanced; and that about Derry, almost the most in the rear. Mortices through the shafts of the car weaken it much; we have a good plan of bolting down the sloats on the shafts; these require only a small augre-hole, and this is bored *in* the plane of the pressure, not *through* it, a material advantage. Thirty years ago, wheel-cars were not as common in this county, as chaises and coaches are now.

Slide-car. I shall say little of so rude and common a machine, except to express my idea, that an implement, compounded of a wheel and slide-car, would be very useful in bringing double loads of turf, with less difficulty, down the steep descents.

The

The slide would operate as a drag in descending, and in ascending might be packed up on the wheels. I have not matured this idea, but have only hinted it for those, to whom such a machine might be useful.

I wish not to dwell on some of our still-existing implements; the *sugan*, the *branks*, the *breham*, &c. These will disappear, when better instruments are attainable:

Ut varios usus meditando extunderet artes
Paulatim.

SECT. 6. *Markets for Grain.*

SEE under the head of towns, villages, &c.

SECT. 7. *Use of green Food in Winter.*

Mr. Gage, of Belarena, feeds bullocks of a good size; in the open season, they are kept chiefly on the eddish or after-grass. Turnips and other soft food are also given.

At Daisy-hill, I saw cows collared on the after-grass; they had hay shaken occasionally to them, and oats was added, which they eat from portable

table little troughs, each separately. In an open season, I am sure that cattle will thrive well by this management, especially in shelter.

Mr. Huey, of Newtown, winters with potatoes, turnips, and cabbages, those cattle which he has fattened, or nearly fattened in his grazing park.

The Rev. Mr. M'Causland, of Bush-hall, used to plant considerable quantities of Swedish turnips in drills; he also had Norfolk turnips, sown broadcast. I was sorry to find this excellent farmer beginning to decline this winter-keeping of cattle; but it seems some of the country people have made vexatious spoil of his turnips. Mr. M'Causland brings cattle from the county of Louth, bought at Mullaghcru, &c.; his usual quantity brought thence, yearly, was one score of bullocks, one score of heifers, bought at a year-old, averaging 3l. 10s. each; he used to rear several from this stock.

Most of the cattle, fed by these gentlemen, is sold for the neighbourhood. At Newtown, a butcher bespeaks his customers, before he draws the beast, for which he has previously conditioned. The price, in spring, is not much above or below 6½d. per lb., the beef of prime quality. At Pennyburn-mill, near Derry, when the oil-mill was going, I saw good beef, fed partly on turnips, and partly on oil-cakes.

There is a custom of selling beef on the *foot*. The purchaser, for his winter's store, takes his choice, at

so

so much per cwt. and appoints the time; the beast is killed at his house, and he gets the offal into the bargain. It is not unusual to trust the beef till May, which is killed in November; the grazier not wanting his money till the next season for buying.

CHAPTER III.

PASTURE.

SECT. 1.—*Grasses. Gramina vera.*

THE grass which predominates is the agrostis stolonifera, called by the English joint-grass, and in the Irish language, fiorin.

In the low meadows of Aghanloo, it grows above three feet in length, and is so thickly matted, that it can scarcely be winnowed and saved in the space, on which it grew.

In Magilligan, the soils, compounded of mossy sand, are sometimes alternately ploughed and in meadow. No care is required, nor any seed. The fiorin springs of itself luxuriantly. I send six miles for this hay, rather than buy any nearer home mixed with the aquatic plants.

I find the same grass in great varieties of soil and climate. On the loamy and deep hoams, or flats, under Streeve, I saw the surface thickly covered with this

this plant, though for five successive crops, and the two last trenched, it had been tortured by the plough.

I think the soft meadow grass, holcus, next in value and predominance. It is called English white grass, and is that generally sown.

At Spring-hill, the sheep-walk over the lime terrace is carpeted with poa annua, intermixed with daisy, and white clover, all native. The meadows below consist of lolium perenne, holcus mollis, and poa pratensis. The drains abound in float fescue.

This last grass is found in the most elevated and dreary wastes, wherever water passes through a drain or turf-hole. Is not this a good hint, as to the adopting some high surfaces for this plant, which is so greedily fed on by horses?

I endeavoured to estimate the comparative quantity of grasses in the meadow before my friend Mr. Acheson's house, taking the figures as parts of one hundred. I made it thus: anthoxanthum, 18; avena elatior, 7; bromus mollis, 8; dactylus glomeratus, 10; holcus mollis, 14; agrostis capillaris, 9; festuca ovina, 5; poa pratensis, 9; alopecurus pratensis, 12; lolium perenne, 8.

Mr. Acheson remarked a part of the same meadow to me. A deep dressing of brownish clay had been given over a sewer, which carried off fetid waters beneath: the whole surface, so circumstanced,

had scarce any other grass than the lolium perenne. It had supplanted all the rest without seeding.

At Ballaghy, Mr. Spottiswood's natural meadows contained the holcus mollis, cynosurus cristatus, agrostis stolonifera, poa pratensis, and agrostis capillaris. These were crowded by the potentilla anserina, ranunculus campestris, heraclium spondylum, tussilago petasites; among which better plants appeared, or rather strove almost ineffectually to appear, such as the plantago lanceolata, trifolium repens, and pratense.

The natural herbage along the rivers consists generally of trifolium pratense, and repens, ornithopodioides, &c. plantago lanceolata and major, holcus mollis, anthoxanthum odoratum, agrostis stolonifera, lolium perenne, cynosurtus cristatus, dactylus glomeratus, ranunculus campestris, &c.

Plants.

The *Parnassia palustris*, of which the exact delineation is on the opposite page, is not common, except in the moist bottoms of Magilligan and Dunbo. It is the only plant of its order and class. The singular beauty of the nectaria, which at first sight appear as groups of secondary antheræ and stamina, makes it an object worthy of minute attention.

The

PARNASSIA PALUSTRIS
Pentandria Tetraginia .

The description of this plant, given by Mr. Berkenhout, is rather too concise. I hope, for this reason, I shall be excusable in venturing to offer one of my own in the terms of the botanic science.

Root—A bunch of delicate fibres: stem, pentangular, slender, simple, decumbent: foot-leaves, ovato-lanceolate, on long slender foot-stalks: stem-leaf, single, cordate, amplexicaule: calix, five narrow leaflets, pointed, lance-shaped, below the germen: corolla, five petals, ovato-lanceolate, white, veined with transparent lines: stamina, five, inserted on the base of the corolla: stiles, none: stigmata, four, close till the ripening of the pollen, afterwards reflex: nectaria, six, each being a palmate group of delicate points, terminating short stems, very like antheræ on their stamina: seeds, many, minute.

I have the following account from Dr. Patterson:

"The crottel, in Irish *croutuil*, is common on our rocks. In England, it is called cak, caker, or cork; by Dr. Rutty, stone crottels; and by botanists, *lichen omphalodes*. It was customary to import this plant from Madeira, and other places abroad, to manufacture it for dyers use.

When manufactured, it is called *litmus* or *lacmus*, *turnsol-blue*, and *archil*. This preparation is a fæcula of the plant, rendered a colouring substance by fixed alkali and human urine, by which it is first turned red.

red, and then blue. When it has acquired the latter colour, the manufacturers make it into cakes, by a mixture of chalk, to increase their profit. The Dutch kept their process for preparing this colouring matter a very great secret; and, in order to mislead the public, they pretended, that it was made from rags, dyed with the juice of the sun-flower, *(helianthus)* from which it obtained the name of turnsol-blue.

This moss, as a colouring stuff, probably has been known to the Irish time immemorial; because the natives employ it in a simple watery decoction, to give woollen goods, in the form of flannel, &c. an orange red colour. A strong ooze is made by boiling, for every pound of *yarn* intended to dye, a pound of crottel in an indeterminate quantity of water; and, if *cloth* is the stuff to be dyed, a pound of the plant is the proportion to every two yards of cloth. A manufacture of this moss, under the denomination of *cudbear*, was commenced in Glasgow, in the year 1777. The Dutch method was at length discovered, and made public in 1788; but it is too long for insertion here.

The discovery of this plant, as applicable to the art of dyeing, is curious; and, like the generality of inventions, was accidental. A Florentine merchant, who traded in the Levant, about the year 1300, happening to make water on a rock, observed that the

green

green colour of the moss growing on it, and on which the urine casually fell, was changed to an azure tint. Reflecting a little more on this circumstance, he made several experiments, and found, that, when mixed with urine and other things, it communicated to the cloth a columbine colour. This process he long kept secret, and acquired by it a great deal of money. The invention, at that period, was so profitable to the Florentines, and excited so much wonder, that the family of the inventor, which still exists in Italy, was called *Rucellai*, from the name of the moss, in Spanish *orciglia*, in English *orchilla-weed*, the dye prepared with it *orchilla*, whence the term *archil*."

Along the shore near Ballyaghran, the plants are chiefly plantago coronopus and maritima, centauria chironia, mysotis scorpoides, euphrasia officinalis, trifolium repens, perpusillum, and ornithopodoides, rumex acetosella. On the gravel, close to the sea, is a plant, which, from its taste, some ladies named the oyster plant. I have not yet had it in flower. The trifolium striatum, heracleum sphondilium, are in the richer spots: the serpyllum, some varieties of the orchis, luppa, rosa canina and usitatissima, salix arenaria, and tormentilla reptans, are common. Great part of the surface is covered by the erica cinerea. The rubus fruticosus, sambucus niger, bursa pastoris, carduus lanceolatus, are common through the

the arable grounds. I need scarcely mention the common plants of marshes, such as mentha aquatica. On the marshy banks of the Bann, I find the pedicularis palustris, ranunculus sceleratus and campestris, senecio jacobea, crepis, rhinanthos, iris, aspergula, seratula, epilobium palustre, equisetum palustre and equisetum limosum, euphrasia officinalis and odontites, gallium palustre, &c.

Near the sea, among the rocks, rumex maritimus, cucubalis behen, many of the plantains, &c.

In the high and rocky pastures, we also find many of the plantains and trefoils—gallium luteum, rosa spinosissima, orchis, erica cinerea, primula veris, crepis, filix mas.

The sandy warrens contain umbillicum, serpyllum, prunella vulgaris, &c.

In the ascent of the mountain from Ballyhacket, the mountains were filled with junci, epilobium, ranunculus campestris, and potentilla anserina, of enormous growth. In the ascent to the Giant's sconce, ranunculus acris; in marshy grounds, campestris; in pasture, viola canina, senecio sylvaticus, euphrasia odontites, rumex acetosa, tormentilla, scabiosa succisa.

The heaths are vulgaris, cinerea, tetralix, multiflora. Among these are several varieties of orchis and satyrion, with the hydrocotyle.

In

In a place, three miles distant from any other of the same family, I found a solitary cluster of the poa annua; a carcass had rotted on the spot, that being, perhaps, the preparative, but whence the seed?

I observed, wherever a quarry had been opened, or a road untrodden in the high pastures, that trifolium repens and ranunculus repens were quickly naturalized; and, along with them, the almost ubiquitous and perennial daisy, bellis perennis.

In Magilligan, the sandy grounds exhibit carpets of great variety; among which the most conspicuous is the arenaria peploides, geranium sanguineum, arenaria serpyllifolia, gallium luteum, the elegant polygala, and centauria chironia. The rosa spinosissima has usurped large tracts, with its equally offensive neighbour, the prunus spinosa.

Among the steep ascents to the high mountain, I ound the arum maculatum in great abundance.

In Myroe, sinapis nigra, black mustard, grows on every newly cast up mound of the ditch. This admits of a question—Is the seed preserved in the ooze, or do birds carry it to where it finds the proper soil?—It is used in the country, and exported, by Belfast, to England.

Among the aquatics, even in low ground, where there is a little swell, we find mellilot, medicago, ranunculus

ranunculus campestris; rhinanthos, and senecio jacobea are in the lowest situations.

In the high arable grounds of the vale of the Fahan, I perceived, that the soil was surprisingly overgrown with rumex acetosella. On inquiry, I found it owing to the manures, which were composts of peat-moss, made *fresh*, according to the idea of Lord Dundonald; these were in fine order for liming. A neighbour of mine had a field in the same condition; he has *shelled* one half of it this spring. I can tell to an inch where the shells stop: one part of the field being green and without the sorrel, the other being quite reddened by the seeds of those plants.

Weeds.

In high soils, run out by too much cropping, the most pernicious weeds are, the chrysanthemum segetum, provincially *gilgowen*, and the Brasila napus, provincially *preasach buidh.*

The stiff soils are infested frequently by the tussilago petasites, or great coltsfoot: the seeds of this plant are winged, so as to be carried to great distances; its stem and flowers come on early; the seeds are ripe in March; any time before this, if the stem were cut, it would prevent its spreading so vexatiously as it does now.

Lord

Lord Kames' observation, respecting the predominance of the agrostis capillaris in worn-out grounds, is generally applicable to this county. I shall mention other weeds in the catalogue of plants.

SECT. 2.—*Breeds of Cattle.*

Horses.

The strains of horses distinguishable in this county are, 1st. the native garron of the mountainous country; these are thinly made up, in general have crooked hams, seldom exceed 14 hands, are often much lower; the prevalent colours are bay or sorrel. These are almost indefatigable. I have seen two heavy country fellows at once gallop one of them, which was certainly inferior in weight to his burthen. Allured by the whiskey, they stop for hours, leaving the poor patient garron to bite at the thatch, or at his own suggaun. This breed have, for the most part, a gentle head and aspect, with nice shanks. I do believe they are well worth attention in mountainous districts; they are begotten promiscuously, and generally by some year-old, or two-year-old sire, called a *clib*, or, using the diminutive, *clibock*.

The

The Scottish highlander is in great request; some of them stout, and, after two good winters, they swell to a good breadth. The same strain, crossed with the sinéwy draft, is still more valuable. Both these breeds are in general use in Magilligan, and on other light grounds. I saw Mr. R. Ross, of Newtown Limevady, make excellent ploughing for wheat with three of these, two at the foot-tree, and one to lead.

We have another race, which is the cross between the blood-horse and the stronger breed. In districts, where the farmers have mares of large bone, this might be useful to confer mettle and speed, but where the bone is scanty, this mixture ought to be deprecated. The keepers of stallions have at last got rid of this fancy, and a better kind is now in their stead. Myroe is famous for a good breed of horses. I observe, that some of the best are, with good feeding, worked at the farm till the season is advanced; a management, which must contribute to the advantage of the keeper, and of the progeny.

I reckon the horses of Myroe superior, not so much from any strict attention to breed, as because the stiff clay requires a stout horse, and because the sporting disposition of the farmers makes them wish for a fleet one, and from this intermixture springs a kind of horse fit for all purposes—

" —— Illi

" ——— Illi ardua cervix
" Argutumque caput; brevis alvus, obesaque terga."
" —— A lofty neck, small head,
" Short flank, and round back."

Besides, the grain being hearty in this district, and the fodder plentiful, the horse is better wintered here than in most other places; on the contrary, few countries are worse off for summer pasture, yet, partly with potatoes, and partly with shorn grass and clover, even their summer feeding is preferable to the bare and worn leas, or, as they are called, *leisures* of other places.

There is a sort of horses, purchased chiefly at Moneymore, but not bred there; these are broad behind, low before, generally black, with some white in the face and legs, very hairy on the fetlock; they are slow, but easily kept, and not bad drudges. In other respects, they are, to my taste, a worthless breed. I have observed this strain in Down, Antrim, Monaghan, and other neighbouring counties.

Cattle.

I observe two varieties of native cows: the one is light in the bone, small in size, extremely active, crooked in the ham, with a good eye and sharp nose, and nice thin neck, a crooked horn, frequently turned upward. This strain is generally black, reddish, or brindled, with some white.

There

There is a coarse-boned, ill-shaped breed also; these have swollen bellies, heavy head, a dew-lap very pendant, a bull-like aspect—

" Cui turpe caput, cui plurima cervix
" Et crurum tenus e mento palearia pendent,
" Et facies tauro propior."

" A deformed head, thick neck, a dew-lap hanging from " the jaws to the legs, and a countenance like that of a " bull."

I was surprized to find some skilful buyers prefer this latter; but I found it was for the sake of the *bone*. The cause of this choice will be more intelligible, when we learn, that these buyers are stock-farmers, who sell their beef rather by *weight*, than *quality*.

Among the cattle, not yet long enough introduced to be accounted ours, we have some fine large well-shaped cows, chiefly from Fermanagh and Roscommon. Many of our stock-farmers frequent those fairs, or others, resorted to by the owners of these cows and bullocks, which they bring down for their fattening parks. The intermediate markets are chiefly Raphoe, Killigordon, Strabane, or Derry. It sometimes happens, that a cow, which springs too early, is turned to milk, and her calf reared; and it is mostly from such incidents, that an improved set of cows are to be found with some gentlemen; these, however, degenerate for want of good bulls.

In

In Magilligan, and many other places, where the fences are bad, the cattle are housed every night; early in the morning, they are turned out, and herded with the sheep.

Cows of the best breed for milk admit the bull in August, after they are two years old, and sometimes in May.

Many young cattle, reared in the low countries, are sent up about April to the high rough pastures; these are called the *yell* cattle, which word is, perhaps, a corruption and construction of *year-old*; just as our farmers call a *day-work*, a *da'rk* of turf-cutting. The price of summering is, according to the grass, from 2s. 8½d. to 15s.

Cows are grazed in the middle pastures, tolerably, at from one guinea to thirty shillings. The best fattening parks are set at two guineas the sum, *i. e.* a cow's grass. There is an objection to the cattle of Magilligan and other sandy pastures. Where the cow bites close, the teeth are greatly worn. Another objection is, that being accustomed to soft water, they are subject to the mourel, where the water comes from lime-stone.

The young cattle are housed in November, and fed with straw of barley and oats. They are small, ill-shaped, no care in the choice of the bull. The milch cows, reared at home, are in calf, or become

tidey;

tidey, the third year, turned to scanty pasture, which is too hard for the rabbits to burrough, housed at night. They are cast at ten years old, and fatted, in a kind of way, with helps of short grass from bottoms and drains, or sent to a park. The milking time here, and, in general, during the summer, is at noon, in order that the cattle may have time to feed, after being turned out in the morning, and to avoid the heat and startling; the other milking time is at night-fall, when they are brought in for all night; that is reckoned a good cow, that gives six quarts in the first meal, and three in the second. In winter, through poverty, hardly more than one is got, on an average, at each milking.

The custom of housing the cattle in the summer, has two disadvantages; it causes the animal to be exposed to the heat, during the day, and, in some degree, it precludes it from the pasture of the early morning,

"Dum ros in tenera gratissimus pecori herba."

Young store-cattle are brought from the mountains of Donegal, two or three years old; these are heifers, or young bullocks, which fatten very readily on indifferent pasture.

The young bullock is called a nab; latterly many of these were driven to Scotland, and thence ultimately to the English market. Some gentlemen fat-

ten

ten these nabs; a good summer and winter keep may be estimated, with the profit, as follows:

Dr.	£.	s.	d.
Cast in May,	4	0	0
Summer's grass, value,	1	10	0
Winter's keep, hay, potatoes, a little oats,	2	10	0
	8	0	0

Cr.	£.	s.	d.	£.	s.	d.
3½ cwt. beef, at 8d. per lb. sold in June,				7	0	0
80 lb. tallow, at	3	8	3 per cwt.	2	5	6
90 lb. of hide, at	2	5	6 per cwt.	1	14	1½
				10	19	7½
Profit on a year's keeping					2	19 7½

The manure pays the trouble of attendance.

The grass of a horse is reckoned at a sum and a half; a sum of sheep, is four ewes and four lambs, or six grown sheep; a sum of geese is twenty.

The ratio of advance is, in the rate of the age, thus: a year-old, is one-third, a two year-old, is two-thirds, and a three year-old, is a full sum. The value of a sum's grass differs according to the nature of the soil; in the high mountains it is at 6s. 6d. or even

5s. 5. In the low country, the worst grass for milch cows is charged at two guineas; a few years ago, it was only one guinea; and even here, the cow is, for the most part, herded or *tethered;* how great the necessity of laying down with grasses and clovers!

One of our best fattening pastures is that of Largantea, on the right side of the road leading from Newtown to Coleraine; part of it is above, and part below the plane of the lime-stone; of course, there is a great change of herbage; yet fifty acres of this, which are rented under the Marquis of Waterford, at forty guineas per acre, graze only twenty-four cows, which, when fat, weigh from 3 cwt. to 3½ cwt. The bottoms of these pastures are sadly over-run with sprat, and other worthless plants, but would make excellent water-meadow, the stream being quite convenient.

As to the rearing of calves, there is a superstition, equally ridiculous and cruel. As soon as the wretch is produced, it is caught by two persons, who pull it most forcibly, one by the fore, the other by the hind legs. This is done to prevent its taking the disorder, salled the *strings*. Its mouth is next stuffed with dung, and then, the longer it is kept fasting, so much the more certain its exemption from all future complaints! I know not whether the Scottish colonist, or the Irish native, has the honour of this tender treatment—this cunning sorcery!

Dairies.

Dairies.

There is little in this county worthy of notice, on this topic. In the district, west of Derry, a good deal of butter is made, which, with the churns of butter-milk, is brought down the steep hills, on slide-cars, for the supply of Derry. The butter is sold at from 9d. to 12d. per lb. of 18 ounces. I refer the reader to the table of prices by Dr. Patterson.

Near Coleraine, Mr. Hunter established a dairy for the supply of the town, and placed a farmer on it. The milk sells at 2d. or 3d. per quart; the butter, fresh, 1s. per lb. (18 ounces), salted, 1s. 1d. per lb. (16 ounces); cheese made of skimmed milk, 6d. per lb., of *full* milk, 8½*d.* per lb.

The cows are laid in at Inniskillen, at from eight to thirteen guineas; some common cows, at from five to ten guineas. Thirteen cows are kept on grass, valued at from fifty to sixty shillings per sum. The yield of a cow averages at twelve quarts per day. These thirteen cows are rented, by the farmer, at 5l. each.

Mr. Hunter rears the calves on butter-milk, which is reserved for that purpose. This gentleman is so judicious an observer, that his authority is highly respectable. He informed me that, after having given

the fairest and best attention to the culture of grasses, he is now convinced of his mistake, in having preferred the sown or forced grass to the natural. His present practice is to take a crop or two of oats, and then suffer the native herbage to get up. The soil is clay, which certainly is improved by turning, and the humidity of our climate may be the cause of the great tendency of our soil to reproduce its native herbage.

"Quaeque suo viridi semper se gramine vestit."

Mr. Curtis, of Ballysally, has set on foot a dairy in the same neighbourhood (and, by the way, no town is worse supplied with the product of the dairy than Coleraine): the milk is sold at the farm, one mile out of town; the inhabitants are glad to get it, after going so far, at two-pence per quart; the butter-milk, sometimes three quarts for one penny, at other times one half-penny per quart. Mr. Curtis feeds in winter with cabbage, turnips, potatoes, and hay, Mr. Hunter gives hay only; these are the only remarkable differences of the managements.

In general, the dairy is connected with the farm and the domestic economy.

Diseases of Cattle.

"Morborum quoque te causas & signa docebo."

1. The mourel is a disease very common in pastures, abundant in water from lime-stone. The cows, which are attacked by it, are incited to urine very frequently, and, at last, pass blood: death is the consequence, unless a remedy be applied. The most successful preventative is, to pour water, thickened with clay, into the stomach, and to repeat this, until the cow is accustomed to the pasture. This disease is, probably, an attack on the kidney by the calcareous matter; whether that matter be not sufficiently carbonated, or whether it parts with its carbonic acid in the stomach, I do not pretend to guess; but, in either case, its causticity is the acting cause. May we not then suppose, that the clay containing a certain quantity of some acid assists, by giving up this acid, to neutralize the lime?

2. The Big-gall is a swelling of the liver, and an overflowing of the bile into the intestines; purging is the continued consequence, 'till the animal dies exhausted. Old cows are most liable to it, especially such as have been fed on straw, potatoes, or whins, or have pastured on flooded grounds during the winter. I have heard of some cures, one half of which

is said to be a *charm*, and the other half I believe to be equally fruitless.

When cows grow old, their teeth separate, and they bite the herbage unequally; this is called *grass-hairing*. The cattle, from sandy pastures, are liable to have their teeth ground down at an early age; a cow from Magilligan, at eight years old, is, for this cause, reckoned comparatively old.

Calves are liable to a disorder, called the *strings*; it is a contraction of the muscular part of the abdomen, proceeding from the acrid quality of the gastric juice acting on the empty stomach. Nature intended, that all young animals should take nourishment at frequent returns. Persons, who heedlessly disregard this, allow the calf food but twice in the day. This long interval of fasting, I found to be the cause of the disease; I lost many calves before I thought of this, but since I have had my calves fed three or four times in the day, I have not had a single one attacked. The ignorant people drag with great force the hind and fore legs of the wretched little animal as soon as dropt, "to *prevent* the strings;" they also say, that the longer it remains without food at first, the more certain will be its exemption from all future disease; and to complete the misery of the young sufferer, they stuff its mouth with the dung of its mother, instead of allowing it her milk.

It

It is thus that ignorance shews its contempt of nature!

Worms are the almost certain consequence of young horses being grazed in the high pastures, where sheep teathe. It seems, that nature has destined certain plants, which thrive, under these circumstances, to receive the eggs, which are hatched in the intestines of the beast, which eats them.

Sheep.

"Hoc satis armentis; superest pars altera curæ,
"Lanigeros agitare greges, hirsutasque capellas."

Our best sort are bought, either in the fairs of the south-western counties, or else at Dervock, to which they are driven by jobbers from those pasture counties. I need say nothing of them.

Our own strain is of all shapes and qualities, horned, and without horns, coarse wool, and fine; almost all are *humpy-boned* and restless.

We get a considerable number from the mountains of Innishowen; these are small *waghins*, from seven to ten pounds per quarter. These sometimes fatten in one summer, and are, when fat, very nice mutton.

Several gentlemen are desirous of improving our sheep, but, in general, it is only for fattening for one season: these sheep are brought into demesnes.

I have

I have crossed a neat selection of our own ewes with a strong Connaught ram. The success is prodigious; from one ram of the breed, I, this year, shore 12¾ lbs. of fine combing wool; it was weighed as it came off. This fine animal is but two year old; he had horns; one he lost in battle, and my saw balanced his loss.

In Ballymullens, near Learmount, sheep were formerly kept in great numbers; at present, much fewer can be permitted, on account of their inroads into the planting.

The breed of sheep has greatly diminished, for some years past, which is owing to the encreased value of grain, and consequently to the encreased attention bestowed on tillage and fencing, to both of which sheep are pernicious. Not long ago, one might see hundreds of sheep, travelling from farm to farm, unnoticed, and unowned. Every servant boy in the country, who had a few shillings saved, laid it out on a sheep or two, which he let loose on the bounty of Providence, and the toleration of his neighbourhood. Towards May, all these flocks were driven to the mountains. The value of their wool and progeny greatly overpaid the grazing and risk. In the time of snow, these depredators, like the locusts of Egypt, devour every thing before them. I have lost, in one night's-time, two thousand heads of curled kale.

The

The faculty of enduring hunger, in these animals, is extraordinary; some have been found alive, after having been buried under snow for three weeks: in such distress, they derive nourishment from sucking their own wool, or that of their fellow-prisoners; this account I have had from very credible authority. I have myself seen a lamb lost for five days under the snow, in a ditch, discovered by the chimney opened through the snow, by the ascent of its breath. A dog, accidentally passing over, gave notice of the concealment, by which incident the fortunate little animal was dug forth in perfect strength.

Formerly it had been a practice to feed the sheep under the hovels of the stack-yard, in which they were folded at night The scarcity of timber has caused a scarcity of hovels; of course, this practice is no more. At present, very few, except gentlemen, give winter fodder, either green or dry. The butchers take our sheep, all the year round, in the open season. Lambs come in from June to August, and bring, in general, half a guinea each.

I have heard it affirmed, that in lower Magilligan a wether of forty pounds weight yielded fifteen pounds of rendered suet, and that the hairiest breed of Innishowen in three years will come to have fine wool.

In the low countries, as in Magilligan, and districts where there is out-pasture, the sheep, kept at home in summer, are folded at night in enclosures, called falls; these are made, by building one sod almost on edge over another, whose obliquity is in a contrary direction; these folds are dug up in the after-season, and the sods and bottoms contribute to the manures.

Our best mutton, purchased at Raphoe and Castlefin, comes from Connaught; it weighs from sixteen to eighteen pounds per quarter, and is, generally, four or five years old. Our mountain sheep are mostly killed, from three to four years old, weighing from eight to thirteen pounds per quarter.

Those, who understand the management, buy the ewes with their lambs in April; the lambs are killed fat in harvest; the mutton may be sold from four-pence to six-pence in December, and, in spring, from six-pence to nine-pence.

Sheep of a good breed couple about six months old; those, that have twin-lambs, are preferred by country people.

Near Coleraine, on the Antrim side, the sheep are natives. At two years old, they sell for thirteen shillings, to be fatted on better pasture.

A small

	£. s. d.
A small sheep, weighing 45lb. at 8d.	1 : 10 : 0
Wool, 3 lb. at 16d. - -	0 : 4 : 0
Second crop, on the pelt, 2lb. at 16d.	0 : 2 : 8½
Suet, 10 lb. at 8d. - - -	0 : 6 : 8
Head, &c. - - - -	0 : 1 : 7½
	2 : 5 : 0

	£. s. d.	£. s. d.
The same, bought at 3 years old, - -	0 : 9 : 9	
Grazing, 12 to a sum, at 10s.	0 : 3 : 3	
Winter-feed of potatoes and oats, - - -	0 : 10 : 0	1 : 3 : 0
Profit, - - - -		1 : 2 : 0

The pelt, paying the butcher, if killed at home.

General Prices.

Hides are sold annually, at from 40s. to 47s. 6d. per cwt

Tallow, at from 45s. to 60s.

Wool, at from 14d. to 17d. per lb.

The quantities not ascertainable.

Goats.

"Densior hinc soboles, hinc largi copia lactis."

There are no herds in the mountains, but individually they are found among the habitations of the lowland poor.

You frequently see the milch goat tied by the head, whilst she browses on the quickset of a neighbour; her owner has no hedge, no land! He has a friend, however, for his little ones, when he has the she-goat. The milk is divided for five weeks with the kid; the kid is sold as venison, and the goat remains, the best succour under heaven.

Where there are many, the custom is to fold them at night, keep off the kids, milk in the morning, and admit the natural client for the rest of the day. In high pastures much might be made of their milk, and their browsing costs nothing.

Pigs.

My worthy predecessor, Mr. Knox, by introducing the Hampshire breed, has much benefited both poor and rich in this country: these are long in the side, broad in the back, round in the quarters, short in the legs, with large hanging ears, grow to a great size, 3 *cwt* and are easily reared, and as easily fattened.

At

At Mr. Sterling's, of Walworth, and at Mr. Huey's, of Newtown, I saw a good kind of broad black pigs, with ears neither pricked, nor quite hanging, apparently a cross of the Dutch with the Hampshire; some weigh 2 *cwt.* The little Chinese have been too much the fashion; though their fore parts are well furnished, they carry little behind. Their chief value consists in affording neat and delicate hams and flitches to small families: to the poor man they are of little consequence.—Quære. Is not the Dutch breed a cross of the Chinese upon the European race?—The Chinese are now mixed with the Dutch; this cross is now common, and is excellent. A farmer near me had one above 2 *cwt.* yet extremely low.

The price of young pigs varies from 3*s.* 3*d.* to 11*s.* 4½*d.* Pork sells at from 25*s.* to three guineas per *cwt.*

Rabbits.

There are two very considerable warrens on the east side of the Bann, the least of which contains, probably, 500 acres; the other about 2000 acres.

A very great warren lies in Magilligan; it occupies not less than 1500 acres, and is divided into the near, and the far end; a distinction of the situation in respect of Newtown and its neighbourhood.

The

The value of this warren, taken by the acre, varies exceedingly: in some places, an acre will contain rabbits worth £.10; in other places, 30 acres will not contain the value of £.1. The swelling grounds alone are most valuable, because the rabbit will not burrow in low flats.

The flesh of these rabbits is either consumed in the farmers' household, or, in still greater proportion, is carried through the neighbouring towns and country. The carrier hangs the rabbits over his horse's back; he sells them from 6*d*. to 10*d*. per couple, skinning or *casing* them at the same time. For the skins he is accountable to the proprietor of the warren.

It is well known, that warren rabbits are greatly inferior to those of demesnes as to flesh, but they are superior as to fur. Those in Magilligan, which are fed on the bent and moss, have the longest fur. The same thing is true of all other animals. The sheep of those pastures, which are *kindly*, grow fine in the wool; it is affirmed, that the coarsest Innishowen or Highland sheep will, in a few summers pasturage in Magilligan, become fine in the wool.

From the best information I learn, that the number of rabbit-skins varies from 1500 to 3000, and that the annual yield is about 2000. These are purchased at two general auctions, held in Magilligan: persons commissioned for the hatters of Dublin, and sometimes of England, are the bidders. The price fluc-

tuates

tuates from 8*s.* to 12*s.* per dozen, and in some extraordinary years, may be a little above or below. Those of the *far end* are first auctioned, and their price generally regulates that of the *near end.* There is a difference in the time of beginning to take the rabbits. The *far end* commences 1st Nov. (or new stile) the *near end* the 12th of Nov. (or old stile.)

Poultry.

Myroe has a good breed of large black poultry; it was introduced many years ago from Liverpool by a Mr. Martin. I think it is the same as that, which I have seen in Normandy, and is probably preserved from degenerating by the heartiness of the grain of this district.* I am endeavouring to raise a breed from the largest of these, crossed with a cock, which I had from Mr. Dubourdieu, the Reporter of the county of Down. The peculiarity of the former is a muff; of the latter, a double nostril, large top, small comb, and feathered or grouse-legs. This bird weighed 13*lbs.* and used to eat off my breakfast table; his tame disposition cost him his life, being ridden to death by my little boys. Chickens sell at 8*d.* per couple; grown fowls at 13*d.* or 16*d.*

The geese are remarkably large and plenty in this neighbourhood. They fatten in summer on the vetches and tares, which abound in the bottoms; in

autumn,

autumn, on the stubble; and in winter, on the potatoe ridge.

Turkies, of the American black wild breed, are not very scarce near Newtown. On the other side of the hills, a smaller whitish-grey breed is very plenty. They sell at from 2*s*. to 4*s*. each.

Ducks also are large, and the poor man depends on their eggs as a substitute for milk, or an occasional luxury, particularly at Easter, when the poor Catholic fries his ration of bacon after long abstinence. Young ducks sell at about 6½*d*. each.

CATALOGUE OF SOME OF THE BIRDS OBSERVED IN L. DERRY.

Order.	*Genus.*	*Species.*	*Observations.*
Accipitres,	Falco,	ossifragus, sea-eagle;	not very common; they prey on rabbits and young lambs, and build in high and solitary rocks, near the sea.
		chrysaetos, golden eagle;	in the highest mountains; these are growing scarce; they prey on rabbits in Magilligan, but build on the Donegal side of the Foyle.
		milvus, kite;	it is frequently seen hovering over poultry.
		nisus, sparrow-hawk;	frequent, and well known.

Accipitres,

Order.	*Genus.*	*Species.*	*Observations.*
Accipitres,	Strix,	flammea, white owl;	not common,
		stridula, tawny screech-owl;	generally about old buildings; more common than the former.
Picæ,	Corvus,	corax, raven;	well known.
		corone, crow;	common; destructive to young poultry.
		frugilegus, rook;	by much too frequent, and destructive to sown grain, &c. not eaten as in England.
		monedula, jackdaw;	builds in old chimnies and high rocks; well known.
		pica, magpye;	very common, and destructive to young poultry, eggs, &c.
		graculus, chough;	near the coast, especially at Down-hill, common.
	Cucullus,	canorus, cuckow;	appears about May, migrates in the bad weather, in the end of summer. I have several times tamed the young; but they have always died towards the winter. It is said, that the cuckoo lays in the nest of the ring-dove, one egg, which is hatched and reared by the same bird.
Anseres,	Anas,	cygnus, swan;	rare; heard at night, flying high.

Order.	*Genus.*	*Species.*	*Observations.*
Anseres,	Anas,	tadorna, sheldrake;	builds in the rabbit holes near the coast; its eggs found by boys often hatched by hens. It becomes familiar, and even bold. I have had six at a time, and have one now for several years—a beautiful bird—couples with the common duck, hitherto no offspring.
		nigra, black-diver;	well known; it is affirmed, that the Sorbonne of Paris once pronounced this bird so near to the property of fish, as that it might be eaten as such.
		anser, goose;	the wild goose, whence the domestic breed; is not so common since the marshes have been drained, and the mountains inhabited. The tame is of a great size in the neighbourhood of Newtown, particularly in Aghanloo and Myroe; it is well nourished by the vetches and tares in summer, by the stubble and potatoe ridge in autumn and winter: several farmers have from 30 to 40 annually. Geese and bacon are the principal flesh meat of the country people; the former is used on times of festivals, or company.

Anseres,

Order.	*Genus.*	*Species.*	*Observations.*
Anseres,	Anas,	marina, barnacle;	in the beginning of winter frequents the coasts of Loughfoyle and Lough swilly, in immense flocks In Boat's Natural History, the following mention is made: "In the bay, "commonly called Lough-"foyle, there grows a grass, "that sends out a stock "about a fathom long: the "root of this is white and "tender, and continues such "for some space above the "root; and it is almost as "sweet as a sugar-cane; the "barnacles dive to the bottom, and lay hold on it as "near as they can to the "root, and pull it up with "them to the surface of the "water, and eat the tender "part of it; the rest they let "drive with the wind to the "shore, where it lies in great "heaps, and when rotten, "is good for manure; from "this sweet grass, it is supposed, proceeds the sweetness of their flesh. Divers "and widgeons, which are "rank and unsavoury elsewhere, undergo the same

Order.	*Genus.*	*Species.*	*Observations.*
Anseres,	Anas,	marina, barnacle;	" change of their flesh, when " they feed in this place." The grass alluded to is, I believe, the fucus saccharinus. Price, 2*s*. per couple.
		penelops, wigeon;	very plenty, and of excellent flavour, sold from 1*s*. to 2*s*. per couple.
		crecca, teal;	common at hard seasons.
		boscas, mallard;	the origin of the domestic duck; frequent enough in certain haunts in its wild state; and, in its tame, well known, and unusually plenty.
	Mergus,	serrator, less diver;	approaches near to shore in storms, wonderfully active among breakers.
	Alca,	impennis, pinguin;	on steep rocks sometimes, more frequent near Horn-head, in Donegal county.
		arctica, puffin;	on rocks near the shores.
	Pelicanus,	carbo, cormorant;	on the coast, in the Foyle river, common, a shy bird.
	Larus,	canus, gull;	well known.

Order.	*Genus.*	*Species.*	*Observations.*
Anseres,	Larus,	nævius, dung-hunter gull;	very common on Magilligan coast; so named from its extraordinary appetite for the dung of other birds, whom it pursues till they drop their excrement, which it catches on the wing. It is doubted, whether this is not a variety, or the young of the herring gull, which is not so common on our coast.
		fuscus, herring gull;	a very large bird on Magilligan shore, not very common; there are other varieties, of which I forbear to attempt the description, as I am not quite certain of them.
Grallæ,	Ardea,	cinerea, heron;	frequents ponds, builds in trees, common about Fruit-hill.
	Scolopax,	arquata, curlew;	on the shores; comes inland in hard weather; the most wary of all our birds.
		rusticola, wood-cock;	well known; appears in the first hard weather of the winter, migrates in spring.
		gallinago, snipe;	common in marshes.
		gallinula, jack-snipe;	common also.

Grallæ,

Order.	*Genus.*	*Species.*	*Observations.*
Grallæ,	Tringa,	vanellus, lapwing;	common; remarkably anxious in the breeding season to seduce men, dogs, &c. from its nest: its note is both plaintive and clamorous,
		fraxineus, least sandpiper;	in flocks along the shores in winter.
		grey plover;	common in flocks, in high pastures.
	Hæmatopus,	ostralegus, sea pie;	it is black, with some white, remarkable for its orange beak, and red legs; frequent on the rocks of the coast.
	Fulica,	atra, coot;	not common; in ponds, in the old channel of the Roe, at Krindle.
		chlorophus, water-hen;	well known along the banks of rivulets, &c.
	Rallus,	crex, rail;	well known; migrates.
		porzana, spotted water-hen;	along the small streams; not common.
Gallinæ,	Tetrao,	grus, grous;	plenty in the heaths, and well known.

Gallinæ,

Order.	*Genus.*	*Species.*	*Observations.*
Gallinæ,	Tetrao,	perdrix, partridge;	common.
		coturnix, quail;	very scarce in this country.
Passeres,	Columba,	œnas, pigeon;	wild, in caverns along the coast; tame, very common with the farmers around Newtown, and with almost all the country gentlemen; of late encreasing.
	Alauda,	arvensis, sky-lark;	very common.
		pratensis, tit-lark;	not so frequent.
	Sturnus,	vulgaris, starling;	in flocks; very common in winter.
	Turdus,	pilaris, fieldfare;	common in winter, in flocks.
		musicus, thrush;	well known; often tamed in cages; the delight of every wood and plantation.
		merula, blackbird;	common at certain seasons; musical, but not so various in its note as the former.
	Loxia,	pyrrhula, bullfinch;	not very common, except near old gardens, particularly at Walworth.

Order.	*Genus.*	*Species.*	*Observations.*
Passeres,	Loxia,	chloris, green finch,	very common.
	Emberiza,	miliaria, bunting;	called the Irish ortellan, from the delicious flavour of its flesh; common only in the fertile countries well inclosed.
		citrinella, yellow hammer;	well known.
	Fringilla,	coelebs, chaffinch;	not quite so common.
		carduelis, goldfinch;	well known; musical, often tamed, breeds with the canary bird.
		linaria, red linnet;	musical; not scarce.
		linaria montana, twite, or *whin gray*;	frequents furze bushes, in high pastures.
		linaria rubicunda, red gray;	frequents thorns; is musical.
		domestica, house-sparrow;	well known.

Passeres,

Order.	*Genus.*	*Species.*	*Observations.*
Passeres,	Fringilla,	montana, white cap;	differs from the former in having white marks under the eyes, and behind the neck, and in being more shy, and less destructive.
	Motacilla,	modularis, hedge-sparrow;	well known; one of the greatest pests of early grain in an enclosed district, extremely clamorous, somewhat musical.
		alba, water-wagtail;	well known, frequent.
		flava, yellow water-wagtail;	not near so common; a beautiful bird in shape and plumage.
		rubicola, stone-chatter;	common near and in mountains, wastes, &c.
		atricapilla, black-cap;	in situations like the former; not very common.
		rubecula, red-breast;	well known; the most familiar of all birds; in evenings, at a late hour, a delightfully soothing warbler: it may be called the nightingale of the North: an excellent prophet

of

Order.	*Genus.*	*Species.*	*Observations.*
Passeres,	Motacilla,	rubecula, red-breast;	of weather; the red-breast, on the *top* of the thorn, never sings falsely.
		troglodytes, wren;	a musical bird; not very common. Boys make this little bird lay eggs to a vast number, by taking them gradually from her nest, which is one of the most comfortable of all the edifices belonging to birds.
		regulus, golden-crested wren;	very rare; a beautiful little bird.
	Parus,	caeruleus, blue tit-mouse;	very rare.
		caudatus, long-tailed tit-mouse;	more frequent.
		major, tom-tit;	common in high grounds.
	Hirundo,	rustica, swallow;	well known; migrates.
		urbica, martin;	builds in windows; well known.

Passeres,

Order.	*Genus.*	*Species.*	*Observations.*
Passeres,	Hirundo,	riparia, sand-martin;	builds in holes, framed by itself, in the abrupt and high sandy banks; common.—These are said to remain all winter in a state of torpor, clustered together under banks, and in holes.
		apus, swift;	I am not sure, whether this variety is common, or scarce in this country.

There are doubtless many other birds, which I may perhaps, be able to name at a future day. At present, I mention only such as I have observed within one year.

Bees.

Among the varieties of the bee, I have observed the *rufa*, or small field bee; the *terrestris*, or humble bee; the *subterranea*, or great humble bee: but it is only of the *mellifica*, or hive bee, that we have now to make mention; that most active and ill-requited subsidiary to the luxury of man!

About 20 years ago this country, (I mean around Aghanloo) was remarkably abundant in honey. I have heard the present farmers say, that, in their fathers time, the honey would be gathered in tub-fuls, at the season of *putting down*, i. e. of suffocation.

There

There has certainly been a decrease. Few farmers now have any bees; and none have more than three or four scaps.

These scaps are sometimes 14 inches high, and, in diameter, at the lowest ring, generally 11 inches wide.

About Aghadowey, they are much larger. Our scaps average from 20 to 40*lbs.* of honey in the comb; from Aghadowey, scaps have been sold containing 106*lbs.* of honey in the comb.

The scap is made of white straw, rolled with splits of briar, (rubus fruticosa).

Our bees generally swarm twice or thrice. The first is in the end of May; the second swarm comes off in 10 or 15 days after the first; and again, the first casts a swarm about the end of July. The other swarms (if any) are not fit for keeping, and should therefore be prevented by raising the scap.

The only gentleman, who has taken pity on the bee, and has set about a compromise with it, is Mr. Acheson. I saw scaps constructed under his direction. They were square boxes, with panes of glass, through which the work might be seen. They consisted of moveable boxes, between which a plate of copper being thrust, the bees above were separated from the honey below.

SECT. 3.—*Markets.*

These are mentioned elsewhere.—See *Towns and villages.*

SECT. 4.—*General Prices.*

These are extremely various. I have detailed every thing in my power on this subject, under the section of *Breeds of cattle*, &c.

SECT. 5.—*Modes of Feeding.*

These also are detailed.—See *Pasture*, &c.

SECT. 6.—*Natural and Artificial Grasses.*

See *Pasture.*

SECT.

SECT. 7.—*Mode of Hay-making.*

Nothing worthy of notice.

SECT. 8.

See under the title of *Cattle, cows, &c.*

SECT. 9.—*Prices of Hides, Butter, &c.*

See after the title, *Markets, fairs, &c.*—See also after *Cattle, sheep, &c.*

CHAPTER

CHAPTER IV.

FARMS, &c.

Preliminary Observations.

BEFORE I can give any particular account, it will be necessary to state some things respecting the general state of property in this county.

It appears, that after the flight of Tyrone, and the other northern chiefs, about the year 1604, King James I. decided on the project for planting or colonising, with English and Scotch, this, among five other forfeited counties, namely, Tyrone, Coleraine, (now called Londonderry), Donegal, Fermanagh, Armagh, and Cavan. For the articles of this project, at large, see Harris's Hibernica, p. 105. For so much as is essential to the county of Londonderry, see Appendix, No. 2.

In the administration of Sir John Perrot, the original choice for a city was Coleraine. Of this place, therefore, we shall remark all that is necessary,

ry, before we proceed to the account of Londonderry; by this course, perhaps, our narrative will be the less involved.

The first agreement between the Lords Commissioners, on the part of the King, and the deputies of the Common council of London, was in 1609; this was not so favourable to the society as their original charter. By this it appears, that 3000 acres, on the *Abbey* side of the Bann, were laid out for Coleraine, which were to be held in *fee burgage*, but the rest of the county in common *soccage*. The charter was granted to the Londoners, in 1613; by this, the 3000 acres were granted absolutely to the London Society, without reservation, in favour of the burghers. A piece of ground, of four acres, remains of the 3000 acres, called the commons, with two parks, also lands then valued at £.120, lying between the Cranagh fishery and the church of Ballyaghran. The society had its claim to all the rest of the property acknowledged.

Coleraine.

The incorporation of Coleraine, according to the charter, consists of twelve aldermen, one of whom is annually elected mayor, and twenty-four burgesses.

Since the chief influence in the corporation has fallen into the hands of the Marquis Waterford, the

estate,

estate, annexed to its mayoralty, is, of course, under the same superintendence. The other property of the society is very much divided. The principal estates, held under it, belong to Mr. Blacker, Mr. Curtis, Mr. Alexander, Mr. Mackay, Mr. O'Neil, Mr. Crommie, Sir George Hill, Mr. Lyle, the Antrim family, Mr. M'Naghten, Mr. Bristow, Mr. Campbell, Mr. D. M'Causland, Mr. Lecky, and Mr. Given. The Antrim family are proprietors of all the lands without the same circle, which contains the society's estate.

City of Londonderry.

The incorporation of Londonderry consists of twelve aldermen, one of whom is mayor, twenty-four capital burgesses, one chamberlain, two sheriffs.

The estate, annexed to this city, on the western bank of the Foyle, was originally computed at 4000 acres. Of this, there were two divisions, namely, the upper and lower liberties. The former division is included within a line, stretching from the Bishop's demesne, by the Sheriff's mountain, and turning eastward by the road to Raphoe, and the hill above Dunmore, and thence to the bank of the Foyle. These lands are held under terminable leases of lives and years, which are sometimes for sixty-one, and

sometimes forty-one years. Many of these leases are now almost expired, which is assigned as the chief cause, why improvements have not been undertaken with the same enterprize, as in the lower liberties. I conversed with some respectable land-holders, under these circumstances, who seem disposed to rival any thing yet done on the society's estate, either in building or other improvements, provided encouragement was given, proportionate to their proposed undertakings; some, among whom the principal is Mr. Alexander Lecky, and after him Mr. Scott, have already laid out large sums on the grounds; and the former has built a very handsome house near the mill-town.

The lower liberties, extending from the bishop's demesne to the west and north, are held in perpetuity, but under a peculiar tenure. The main streets of the city being divided into *lots*, consisting of thirty-six feet each, measured in front; to these were annexed *perches* in the *island*, that is, the peninsula, on which the city stands. It seems, that these *perches* were intended for gardens; they are always under an acre; and thence, no doubt, their denomination. It is curious that, though the acre in the county is Irish, according to the plantation measurement, yet that in the city is English. Connected with each *lot*, were certain *tenements*, called *dozens*, from the number of acres of which they consisted,

with

with only so much variation as, in the instances of bad soil, compensated by some additional quantity. These *dozens* oftentimes are held separately from the *lots* and *perches*. Some gentlemen hold several of them together. Mr. Hart, of Ballymagard, has united them, to the amount of 350 acres.

The other gentlemen, who have contributed to ornament the west bank of the Foyle, have also added them together in quantities, sufficient for their accommodations and improvements. The effects of a good tenure are exemplified fully in the state of the lower, compared with the upper liberties.

Between these liberties intervenes the bishop's demesne, which is divided into parks, at present let from year to year, which, in the way of accommodation to the inhabitants of the city, are, from their neighbourhood, invaluable.

Culmore.

Strictly speaking, this cannot be enumerated as a property in the county of Londonderry, yet, for reasons already mentioned, we shall notice it.

In the reign of Elizabeth, the Lord Deputy Mountjoy saw the importance of this place, which, however, was not fortified and garrisoned till the beginning of the seventeeth century, by Sir Henry Duckra, the superintendant. Since that time there

there has been a succession of governors, who have a salary from the crown, with an estate of about 500 acres, called the Governor's demesne. The principal occupant here, is Mr. Abraham M'Causland. The rest of the lands, so far as they are arable, are in the hands of poor farmers, resident in the village.

Proprietors.

In respect of proprietorship, the county of Londonderry is divided into, 1st, Church lands, making a large portion of the county, and bestowed, chiefly on the bishop and his successors, after the suppression of numerous monasteries, with reservation of Chapter lands for the endowment of the deanery, and confirmed, finally, in the time of James I.; these remained, without alteration, in their original sites. The primate of Armagh also had his claims, which were asserted by Sir Tobias Caulfield, one of the king's commissioners, to certain convent lands in the southern part of this county, which was then called Nether Tyrone. These claims were allowed, and, since that, the successors in the primacy have been proprietors in this county.

Sir Thomas Phillips, son of governor Phillips, had a grant of 3500 acres in the manor of Lymnavady, with 500 acres in that of Castle-dawson, assigned

signed to him as a recompence for his various services, particularly for his superintendence in surveying the plantation lands, and regulating the settlements of the county. It may be well supposed, that a gentleman in his situation did not choose his lot in districts of an inferior quality.

The former of these properties was purchased by Mr. Conolly, then Speaker of the Irish parliament, the latter by Mr. Dawson, who was then a secretary in Ireland. Each of these was sold by a descendant of the original grantee, and remains in possession of the representatives of the above-named purchaser. In one of these properties, Newtown-limavady, there was a borough, under the patronage of the proprietor.

Certain lands were also reserved by the crown to be erected into freeholds, one distinction of which was allotted to such of the original proprietors as had not been implicated in the rebellion of Tyrone. These were either the original estate itself, or else some property which could be better spared, considering the general object of the plantation; these form what are now called, native freeholds.

A second species of freehold was erected by the crown, for the express purpose of insuring a sufficient number of jurors to transact the business of the county at the general assizes. Six of these freeholds, annexed to each proportion, seem to have been disposed

posed along the borders of each proportion, and these are what we now term the crown freeholds.

After these reservations, the remainder of the county was granted to the twelve companies, or guilds of London, to be held by them and their future representatives or assigns.

A List of the principal Proprietors in the County of Londonderry.

*N. B. F. denotes Freehold, L. Leasehold, C. Church-land, P. Perpetuity, * signifies Residence and Mansion, † Mansion, without Residence.*

First Class, £.2500 annual Value, and above.

Earl of Bristol, Bishop of Derry, *C. L.*
Rt. Hon. T. Conolly. *F. L. P.*
Marquis of Waterford, *F. P.*
Rt. Hon. Wm. Brab. Ponsonfonby, and G. Ponsonby, Esq; *F. P.*
* John Richardson, Esq; *L. P.*
* Robert Ogilby, Esq; *L.*
* Rt. Hon. J. Beresford, *L.*
* —— Dupré Esq; *L.*
* George Jackson, Esq; *L.*
—— Rowley, Esq; *L.*
Alexr. Stewart, Esq; *L.*
Earl of L. Derry, and Sir R. Bateson, *F. L.*

Second Class, £.1000 annual Value, and above.

Marquis of Donegal, *F.*
* Hugh Lyle, Esq; *F. C. L.*
* Conolly M'Causland, Esq; *F. C. L.*
* Marcus Gage, Esq; *F. C. L.*
* James Acheson, Esq; *F.*
* Sir G. F. Hill, *F.*
* Dom. M'Causland, Esq; *F. L. C.*
* David Ross, Esq; *F. C. L.*
* John Sterling, Esq; *F. C. L.*

Bishop

Bishop of Clonfert, *F. C.*
* George Canning, Esq; *F.*
Rev. C. Downing, *F.*
Lucius Cary, Esq; *F.*
* Hamilton Ashe, Esq; *F. C. L.*
* G. C. Skipton, *F. L.*
* Wm. Lecky, Esq; *F. L.*
Coheirs of —— Mauleverer, Esq; *C. L.*

Third Class, £.500 annual Value, and above.

Sir Robert Staples, *F. L.*
* James Scott, Esq; *F.*
* Averel Lecky, Esq; *F. C. L.*
† Barry Beresford, Esq; *F.*
Lord De Blaquiere, *F.*
* W. Warren, Esq; *F.*
* John Church, Esq; *F.*
R. C. Maxwell, Esq; *C. L.*
Henry Alexander, Esq; *F.*
* —— Stephenson, Esq; *F. L.*
* Nath. Hunter, Esq; *F. L.*
* Robert Campbell, Esq; *F.*
* John Staples, Esq; *C. L.*
* Sir And. Ferguson, *C. L.*
* John Ross, Esq; *F. L.*
* Alex. Lecky, Esq; *F. L.*
* Stewart Blacker, Esq; *F.*
Gore Wray, Esq; *F.*
* G. L. Cunningham, Esq; *F.*
Lord Langford, F.
‡ * Sam. Lyle, Esq; *F. C. L.*
H Blacker, Esq; *F.*
* Henry Ellis, Esq; *F.*
* John Hart, Esq; *F.*
* Alex. Young, Esq; *F.*
* John Crommy, Esq; *F.*
* John Spottswood, Esq; *F. C. L.*

‡ This gentleman has lately made several additions to his property, and particularly in the mountainous district of Sluggady (Sliabh-gady, *Thiefs-mountain*): his exertions in lime-burning and reclaiming are suitable to the spirit and activity, which characterise all his pursuits.

In order to give some idea of the relative value of properties, I subjoin what is called the key of the County, i. e. the general valuation, according to which the cesses for roads and other public works are applotted.

	Church.	£. s. d.
1. Drapers, Rowley,	- - -	141 : 15 : 10
2. Salters, Bateson,	- - -	131 : 13 : 4
3. Vintners, Conolly,	- - -	121 : 10 : 9
4. Mercers, Stewart,	- -	131 : 13 : 4
5. Ironmongers, Dupré,	- -	131 : 13 : 4
6. Merchant-taylors, Richardson,	-	101 : 5 : 7
7. Clothworkers, Jackson,	- -	91 : 3 : —
8. Haberdashers, Lord Waterford,	-	141 : 15 : 10
9. Fishmongers, Beresford,	- -	101 : 5 : 7
10. Grocers, Conolly,	- - -	141 : 15 : 10
11. Goldsmiths, Ponsonby,	- -	121 : 10 : 9
12. Skinners, Ogilby,	- - -	141 : 15 : 10
13. Limavady,	- - - -	182 : 5 : 11
14. Mr. Dawson,	- - - -	32 : 8 : 2
15. Mr. Gage,	70 : 17 : —	70 : 17 : —
16. Sir John Rowley,	141 : 15 : 10	141 : 15 : 10
17. Dumbo,	36 : 13 : 4	36 : 13 : 4
18. Chichester Philips,	36 : 13 : 4	36 : 13 : 4
19. Sir Robert Staples,	14 : 3 : 6	14 : 3 : 6
20. Cunningham and Richardson,	16 : 4 : —	16 : 4 : —
21. Faghanvale,	14 : 3 : 6	14 : 3 : 6
22. C. and L. Derry,	- - -	141 : 15 : 10
23. Town of Coleraine,	- - -	81 : — : 9
24. Liberties of ditto,	- - -	121 : 10 : 6
Church,	330 : 10 : 6	2400 : 14 : 6

SECT. 1.—*Farms. Their Size, Rent, Tenures, Leases, Clauses, &c.*

The size varies from two to 200 acres. Both these are extremes; the average is from five to 20. Where there has been a perpetuity or a long lease, it is *split*, that is, the children are settled upon divisions of the father's farm; by which means, leases of 40 acres come to be parcelled, in two or three generations, into patches of four or five acres. It seems as if the new let lands were disposed of under some similar system of parcelling. I could give instances, where whole districts are sub-divided into six or seven acres, and rarely can boast a farm of 12 or 14. Another cause of the partitioning of land, is the indolence of some persons, not worthy of the title of farmer. These men, when they get a lease of 12 or 20 acres, think it better to let as much of it at a rack rent to under tenants, as will let them sit clear, as they phrase it. Clauses against alienating ought strictly to be enforced against all such indolent persons, who prefer walking about, with their hands in their pockets, to the pleasure of an interesting occupation, and a thriving household.

Having

Having premised this in general, the reader will, perhaps, be better satisfied in passing over the particulars, which I noted in various districts.

Near Ballaghy, Mr. Conolly's perpetuities from seven to ten acres; other property from four acres, sometimes two, to forty, now split. Even this is better than new improving tenants, setting themselves up as lazy landlords over poor cottiers.

Many parcels of reclaimable land are here in poor hands. No lime convenient. Near the Grange river, three poor families were living on ten acres, having among them but two horses and four cows.

Near the lake in the manor of Castle-Dawson, freehold copy-holders. Term 21 years, one life; bog not measured: seldom cottiers.

At Ballydeagh, between Magherafelt and Maghera, property leased in the *mean*, sometimes several in one lease; three and a half acres per man, with rough grazing: 13*s*. 6*d*. per acre is given for light rubble land.

About Desartmartin, farms run from five to forty acres, plantation measure.

At Drumreany, near the former, leases not renewed.

On the Derry side of Coagh, where the land is of superior quality, 16 acres rent at £24; meadow, at 40*s*. per acre. There is, if I remember right, a term of 14 years given, with a clause of renewal for

for 14 more. The tenantry here are superior as to timber, houses, soil, culture, large fields, drilling potatoes, oats, &c. Old leases were at 6*s*. 8*d*. now about a guinea, which is very cheap: such land would be let at more than two guineas in my neighbourhood.

Besides one other instance in the lands of Sir George Hill, at Ballyaghran, there are debentures or Cromwellian grants in Ballinderry.

On the Primate's property, land is leased at one guinea per acre, 31 years and three lives.

In the neighbourhood of Kilrea, many conditions of new leases were repeated to me, which I do not like to publish merely from the report of exasperated countrymen. The farms are greatly split; the tenure is, of necessity, short; and, for the payment of the rent, the landlord must depend on something else than the plough.

Near Ballysally, lands, which were leased at 20*s*. 28 years ago, are now let at two guineas.

On the banks of the Bann, near the old church of Kildonagh, lands set from 16*s*. to 24*s*. per acre.

Coleraine town-parks lately set to the highest bidder, 21 years and the life of the lessee, at five guineas per acre.

At Tondue, 23 acres, of which 21 are arable, pay rent £17; turf is allowed for fuel, and burning lime for

for improving the farm, but none else. Lime is burned in little beggarly pot-kilns of sod.

In the same district, the rent, formerly five guineas, is now 24 guineas for 35 acres; the soil, not good enough for blanter, is sown with light-foot.

At Grace-teel, in the Fishmongers proportion, the tenant holding from 20 to 40 acres lets off, perhaps, the worst half. Thirty acres pay £9; for twelve of worse land the under tenant pays £8.

Near Tamnagh-iron, the best mountainous arable is let, per acre, at 11*s.* 4½*d.*; green mountain pasture, ditto, 5*s.*; moor and ling, ditto, 6*d.*; turbary, 1*s.*

In the high countries between Glassyowrin and Grace-teel, the little towns are crowded with huts; the tenure, seven or eight years; four acres, with coarse grazing for two cows, let at £3.

The lands of Artikelly, at the expiration of the former lease, which was for 61 years, have risen from six or ten shillings, to forty or fifty by report.

On the west of the Roe, at Ballymore, for a lease of 41 years, 11 of which are expired, 13 acres at £8, were fined at £140.

At Campsey, the property of Lord Londonderry, the land had been let on long leases, now expired, or expiring; the effects of old tenures are more visible in the snug dwellings of the villagers, than in their progress in reclaiming the adjacent bog.

In

In fact, such an operation is only of late become an object with the lower farmers. To reclaim wastes, is either the effect of a surcharged population, or else it is the speculation of skilful capitalists; in either case, the period of an expiring tenure is not that of exertion.

At Garvagh, the estate of George Canning, Esq. the size of farms runs from five to fifteen acres, with outsport of rough grazing; the size of enclosures is from three to five acres; these are without quicks, except in town-parks; the tenure in general is 21 or 31 years, with three lives. Some new leases have been let at 21 years, with only one life. I have also heard of leases for two lives, without any years.

At Slaghmanus, the freehold property of Mr. Gamble, 28 acres of tolerable ground, surrounded by mountains, and without roads, like a good kernel in a coarse shell, are rented at £35, per annum.

At Tamniarin, a mountainous tract above Dungiven, Henry Alexander, Esq. has reclaimed some land, for which he receives from 12*s.* to 16*s.* per acre.

On the church lands of Ballyscrehen, a tenant of 25 acres, near the mountain, of whose lease only 16 years are to come, and whose rent was 11 guineas per

per annum, received 130 guineas for his tenant right, on going to America.

On Mr. Ponsonby's estate, the leases are some for 31 years, some for 71, and three lives: the size of farms varies from 10 to 200 acres. The tenantry on this property are in the first class of farmers; and might be justly called a yeomanry. At Cross, 200 acres are let at £57.

In the mountain countries, it is very difficult to form any estimate, either as to rent, or size of farms. The newly reclaimed lands have not yet been surveyed as arable in many places. Besides this, the value lies to a considerable amount in the capacity for grazing young cattle, in the aptness for manures of ashes and lime, and in the convenience of fuel.

The tenantry next in comfort to that of Mr. Ponsonby, seem to be that of Mr. Dupré. It is curious, but true, that the exhausted lands in this county are among the most prosperous. This is particularly true of those lands, of which the Bishop, (Lord Bristol) is the immediate landlord. His Lordship has the merit of having been the originator of lime-burning, which has entirely altered in Dunbo the condition of the land and the tenant. In the late dearth, half a year's rent was remitted to his poorer tenants.

On the Primate's property, Mr. Stapleton lets his land extremely reasonable. I have seen some excellent

cellent grounds let by him at one guinea, when those of the same quality, on the opposite bank of the river, are let at two guineas. Some of Mr. Staples' tenants informed me, that they renew every seven years, and pay a trifling fine.

I have heard lately of a most benevolent action done by one of his Lordship's principal tenants. Mr. M'Causland, of Fruit-hill, having advanced money to his labourers in the late distressing times, found that it was more in the wish, than in the power, of these poor men to repay. Some were indebted to the amount of £30. Mr. M'Causland, pitying their situation, drew his pen over their accounts, and ordered them to begin again. What a noble contrast to some other transactions!

SECTIONS 2d and 3d.

Farm-houses and Offices, Mode of repairing, &c.

These are built and kept in repair by the tenant. In some of the richest countries, where stones are not to be found, the houses of the wealthiest are sometimes of mud. In other places, the houses are built with the stone of the country, either with clay or mortar.

Almost

Almost universally, the farm-houses are covered with thatch. Their sizes and conveniencies differ according to the wealth or spirit of the tenants. With few exceptions, they are kept neat and orderly.

SECT. 5th and 6th.

See under Section 1st.

SECT. 7th.—*Cesses, Tythe, &c.*

I shall endeavour to shew, under one view, the taxes, to which the occupier of a farm is liable, both for the exigencies of the county, and of the church establishment. I offer for this purpose a collection of particulars, noted as the average of different districts.

Near Ballaghy,

	£.	s.	d.
10½ acres, value £9, pay			
Half-yearly county cess,	0	9	5
Yearly tythe, -	0	13	6

Near Ballyronan,

20 acres, rented at £18,			
Cess,	0	11	4½
Tythe,	0	15	2

Near

Near Desartmartin,

	£.	s.	d.
18 acres, rent £28, 6s. pay			
Cess,	1	6	0
Tythe,	1	13	3
Near the same,			
20 acres, value £20,			
Cess,	1	10	0
Tythe,	1	10	0
For repairing church,	0	4	4
Near Magherafelt,			
24 acres, rent 19 guineas,			
Cess,	1	3	0
Tythe,	2	1	4
Near Monyemore,			
8½ acres, rent £7, 8s. 9d.			
Cess,	0	13	0
Tythe,	0	12	0
Near Coagh,			
9 acres, rent £10, 4s. 9d.			
Cess,	0	9	6
Tythe,	0	5	0
Near Magherafelt,			
21 acres, rent £11.			
Cess,	1	0	3
Tythe,	2	2	0
Church cut,	8	0	0

Near the same,

	£. s. d.	£. s. d.
7 acres, value	7 0 0 pay	
		Cess, 0 6 10
		Tythe, 0 13 6

At Drumraney,

	£ s. d.	
22½ acres, former rent per acre, now out of lease,	0 17 10	
		Cess, 1 0 7½
		Tythe, 1 7 6

Largana-goose,

3½ acres, rent £4, 16s.		
		Cess, 0 2 11
		Tythe, 0 7 0

Bally-na-schreen,

10 acres, rent 3 guineas,		
		Cess, 0 5 0
		Tythe, 0 18 0

At Strad, in the Ballymullins,

5 acres, rent £4, 15s.		
		Cess, 0 5 0
		Tythe, 0 4 6

Near Bond's-glen,

25 acres, rent, £42, grazing in the bargain,		
		Cess, 0 15 0
		Tythe, 1 14 1½

Slagh-manus,

Slagh-manus,

10 acres, rent £10, pay

	£.	s.	d.
Cess,	0	8	0
Tythe,	0	16	0

At Tondue, on the Fahan,
number of acres uncertain,
rent £17,

Cess,	0	8	0
Tythe,	0	5	0

Near the same,
large farm, rent £50,

Cess,	0	11	0
Tythe,	2	5	6

Cross, near Derry.

	£.	s.	d.
25 acres, with grazing, rent,	42	0	0
Cess,	0	15	0
Tythe,	1	14	1½

Near the same.

	£.	s.	d.
200 acres, rent,	57	0	0
Cess,	8	0	0
Tythe,	6	0	0

At Letter-shandoney.

	£.	s	d.
10 acres, value,	10	0	0
Cess,	0	6	0
Tythe,	0	9	7

Near the same.

	£.	s.	d.		£.	s.	d.
13 acres, rent,	4	0	0				
				Cess,	0	10	0
				Tythe,	0	8	0

Liberties of Derry, Lord Spencer Chichester's land.

	£.	s.	d.				
22 acres,	20	10	0.				
				Cess,	0	14	2
				Tythe,	1	10	0

Grace-teel.

	£.	s.	d.				
13 acres, rent,	8	0	0				
in the high lands.							
				Cess,	0	5	0
				Tythe,	0	12	6

At Culmore, in Myroe.

	£.	s.	d.				
66 acres, perpetuity, rent							
only	12	10	8				
				Cess,	5	10	0
				Tythe,	6	16	6

Near the shore, in the same.

72 acres, perpetuity, rent, a trifle.							
				Cess,	9	0	0
				Tythe,	11	7	6

At Ballymore, west of the Roe.

	£.	s.	d.	£.	s.	d.
19 acres, value	19	0	0 pay			
			Cess,	1	8	0
			Tythe,	2	6	0

In Magilligan, Lord Bristol landlord.

	£.	s.	d.			
24 acres, Scottish, rent,	17	0	0			
			Cess,	1	2	9
			Tythe,	1	14	1½

At Ballyhendry.

	£.	s.	d.			
20 acres, rent,	30	0	0			
			Cess,	1	5	0
			Tythe,	2	10	0

Town-parks of Limavady.

	£.	s.	d.			
4 acres, English measure, value,	8	0	0			
			Cess,	0	15	0
			Tythe,	0	17	0

Aghanloo.

	£.	s.	d.			
100 acres, of the first quality, rent,	56	17	6	bishop's land to his lease,		
			Cess,	5	2	0
			Tythe,	11	14	0

In

In the same.

	£.	s.	d.		£.	s.	d.
5 acres, valued at	10	0	0				
				Cess,	0	4	0
				Tythe,	0	8	3

Coleraine-parks.

4 acres, plantation measure, rent, 5 guineas per acre, lately let.

Tythe drawn annually, or valued at the rate of 7s. per stook of barley, and 4s. oats.

About Derry, tythe is much cheaper.

I know of no certain modus. About Garvagh, I have heard of 5s. per acre being the fixed tythe of oats.

At Camus, on the Bann.

	£.	s.	d.		£.	s.	d.
11 acres, rent,	17	0	0				
				Cess,	0	19	3
				Tythe,	0	17	4

South of Mount Sandel.

	£.	s.	d.				
20 acres, rent,	12	0	0				
				Cess,	0	19	7
				Tythe,			

Near the same.

	£.	s.	d.				
10 acres, rent,	11	7	6				
				Cess,	0	8	0
				Tythe,	0	17	0

SECT. 8. *Proportion of Working Horses, &c.*

IT is impossible, and it would be uninteresting to detail this. In general, two good horses will be sufficient for the tillage and extra-work of a farm of twenty acres. In the smaller parcels of land, scarce sufficient for one horse, it is usual to lend and borrow, which is called *morrowing*.

SECT. 9. *General Size of Fields, &c.*

THEY vary, from two to eight acres. Some few instances of larger enclosures occur, principally in the demesnes of gentlemen,

SECT. 10. *Nature of Fences.*

A LARGE proportion, especially of those, which have been made a considerable time, as march-ditches, are formed by throwing up the earth out of a ditch three feet wide, and three feet deep on either side of the mound, which mound is six feet

at

at the base, and as high as the nature of its components will permit. These remain, either naked, or covered with the smaller furze, eulex.

The fence, next as to frequency, is that of a single ditch, whose contents are heaped on the one side, which is the bank. The usual rule is, that the bank, or back, should measure four feet at the base; the ditch, or gripe, also should be of the same width; and if it be between two properties, then the bank is placed on the highest ground. The parties take care of the parts belonging to their respective mearings; one scours the ditch, the other mends the bank.

In the improved countries, especially in the neighbourhood of towns, quicks are now generally planted; the quick is placed, usually on the shear sod, over which another sod of vegetable mold is placed, and then the contents of the ditch are heaped up. In clay grounds it is not easy to find stones, but in other soils it is usual to put a row of stones above, and another below the quicks, for the purpose of rendering future weeding more easy and expeditious. I observed, in many instances, that the quicks fogged more in the clays, composed of the matters lying under the basalt, than in the stiffest and coldest clays, composed of the solution of the schist or flag. Where the quick is not planted, it is now the practice to plant the black sallow, (salix); the cattle will

not

not crop this; and thence, its preference to the other more valuable sallows.

In Magilligan, the fences are chiefly composed of the sod or sward, after it has lain long enough to interlace its roots and bear handling. Adjacent to the base of the intended ditch, the sods are cut in the following manner; the first, which is called the shear-sod, is laid over on the base, grass to grass; the next row is laid with the grass out; the third is laid with the edge out, so that it penetrates with its longest dimension into the ditch for the purpose of binding it: every successive row is laid alternately, as the two last mentioned. The interior part of the ditch is filled with the sandy subsoil, and well clapped together by the spade at every row. A coping sod is laid over all. No other fence is practicable in this sandy country, except a very temporary one, formed by merely laying the sod on edge, rather obliquely, as to the perpendicular, and lengthways, as to the thickness of the fence; the second row is laid with its obliquity reversed, so that a perpendicular line would be the intersection of a zigzag. This last kind of fence is often topped with thorns, or *brairded;* it is in use in various districts, where only an occasional fence is required. It has one good quality, that of being an effectual fallow; so that this sodding, when thrown down, will carry crops equal to the rest of the field manured.

We

We find, in stony countries, the fence composed of the loose land stone, gathered off the field, and thus answering two good purposes. In very rocky grounds, which happen to be in the hands of laborious people deserving better soil, the rough ground is cleared in this manner; the rocks, being quarried, are rolled into the future trench, out of the line of the future potatoe ridge; the crop being dug in winter, these rocks are rolled to the top of the ridge, and thence dragged on slide-cars to the margin of the field, of which they become, in time, a very solid fence.

Sunk fences are not much in general use. A climate, like ours, requires shelter. In bottoms, and for the purposes of draining, they are useful, and in such cases they are to be found.

Ash, sycamore, and oak, particularly the two former, have been planted in hedge-rows. If the practice be a bad one, we have the comfort, that it has been followed very little, and is likely to be, in common with every species of useful planting, utterly neglected by the farmers in the county of Londonderry.

Gates.

The only remark to be made is, that few are to found, except those belonging to gentlemen. A

hay

hay-rope, strung with thorns; a few sticks, kept together by cross-rungs, and hung with rope: such are the gates of the farmer, except near towns. I saw a plan of hanging a gate at Mr. Beresford's; it was new to me; the swing-post ended in a round tenant; the standing-post had a square tenant; a cap-piece of wood was driven on each of these; so that the round tenant, playing in the round mortice, allowed the swing-post to turn freely; the lower end of the swing-post played in a round socket of wood fastened in the ground; so that, without iron, a strong and economic hanging was effected.

Lord Bristol introduced a very neat kind of gate, the bars of which are of oak rounded. This, with the self-shutting gates of demesnes, is alone worth notice. I have never seen a gate, which comes up to my idea of strength at the turning part, and lightness at the swinging. Morticing is a weakening plan, in gates as well as in cars.

Sect. 11. *Mode of Hedge-rows, &c.*

See the former head;—nothing else worthy of note.

Sect.

Sect. 12. *Mode of Draining.*

In very stiff ground, sod-draining is a little practised; for this, two large turfy-sods are laid, so as to be distant nine inches at the bottom, and to rest on each, open at top, forming the figure of a triangle, whose base is the channel. The back of this is clayed, and then all is covered. This, however, is not judicious when stones may be had for the French drain; which latter practice, in stony ground, affords the easiest opportunity for getting rid of the surface stones. Where land requires to be intersected with water-tables for carrying off the moisture from the water-furrows after seeding, it is a judicious practice to begin before ploughing, and having marked the hollow course, which is to be the future drain, to dig out, and drain off to the *midden*, or to some poor spot of the same field, two or three spadings in breadth, and one spading deep of the *mother* earth; this facilitates the passage of the water, and, by rendering less water-furrowing or trenching necessary after sowing, saves the furrows from being trodden, and the seed from being buried. The passage of the plough and harrow will not fail to slant down the edges, and to bring mold enough

enough to cover what seed may fall on the sloping sides of the drain.

I have practised the plan of ploughing a *red-hint*; that is, to take up a fur from the subsoil, after the hint has been cleared. This practice has the advantage of deepening the water-fur at the present, and tends, by repetition and change of place, to deepen also the whole soil.

When a field consists of a long reach of a declivity, I think it better to plough it diagonally, than up and down. In order to ascertain the digression of the obliquity of the future ridges, it will be right to try the plough in some of the most steep and deep-cut parts; the difficulty will consist in the reluctance of the fur-slice to fall back from the plough-wrist; after the passage of the plough, it is also too ready to fall in, if not completely mastered and laid over. Having found the degree of obliquity, which is practicable and convenient, lay off a fur whit and a fur back, and mark at equal distances for the parallels. Let the ridges be all thus marked, before the finishing of any, and let the fur whit be opened up the hill, and the fur back down, because the lay up of the back is more difficult than the laying up of the whit, or the opening fur. Having marked the oblique ridges, proceed to intersect these, at the interval of about sixty feet, with other furs in the direction of the declivity up and down. The intention of these intersecting

intersecting is, to open drains for the more ready carrying off, by the declivity, the water, which is so far conveyed down the furrow; it has also a further use, which is that of intercepting the flow of the water, which would otherwise pass down the whole length of the oblique furrow. The advantage of thus shortening the reaches of the water-vents will be evident to those, who have observed the difficulty of having the lower part of their field dry enough, to suit the various seasons of ploughing, seeding, &c., at which the upper parts are manageable; besides, a field, thus laid out, becomes dry in half an hour, after heavy rain, and it will ripen equally in all parts.

This management of declivities has an obvious advantage over that, in which steep grounds are ploughed with single fur, *i. e.* the plough returns without a fur back, and only comes with a fur, which takes double time and labour to no purpose whatever, besides the disadvantage of continually throwing down the earth from the height, when it is wanted to the hollow where it abounds.

SECT. 13. *Nature of Manures, dunging, liming, shelling, &c.*

Spârge fimo pingui & multâ memor occule terrâ,
Aut lapidem bibulum, aut squalentes infode conchas.

I SHALL begin this subject, by a quotation from the Natural History of Ireland, (p. 193). "At Crumbully-guillen, or the Leck, the lime, when soft and oily, is dug with a spade, and carried out for manuring land; it is most proper for mossy and hagley ground. One hundred and sixty loads are given to an acre; each load is about 2 cwt. The harder part is broken into stones of a pound weight." The reader will find a description of this quarry, under the title, *Lime*. Its use has been lately exemplified in the farming of Mr. M'Causland. This gentleman drew a quantity of the rubble, or, as it is called, ridding of the quarry; others have been in the practice of doing the same, as will appear under the proper heads.

Lime at the Pullen quarry, is quarried at the rate of one guinea for 100 barrels; 80 kish of turf are required to burn 120 barrels of stone lime, which is delivered at the kiln generally from 20*d*. to 2*s*. per barrel. In general, lime in the neighbourhood of Newtown-

Newtown-limevady is laid down, at favourable seasons, at from 20*d.* to 2s. 2*d.* per barrel: at this rate, it is dearer than shells as a manure.

At Muff-glen quarry, in Mr. Conolly's proportion, (the Grocers) lately opened, the plan is good: a quarry-man is appointed, who opens and regulates the quarry, and weighs out the lime-stone to the tenants at 1*d.* per *cwt.*

The lime of the Pullen quarter is said to be next to that of Desartmartin in esteem: it is said to be better, or stronger, than that of Magilligan, at the rate of three to four. One barrel of lime consists of only three bushels of stone; when slacked, it swells from six to nine bushels, and makes mortar at the rate of from one to two, and sometimes three, of sand.

White lime, from Mr. Miller's kiln, near Springhill, is sold at from 1*s.* to 1*s.* 3*d.* per barrel.

In the liberties, south of Coleraine, lime is brought from the white rocks on the shore, and burned on the farm; two turns of turf in the day; the same of lime; costs better than 18*d.* per barrel.

At the glebe of Dumbo, called Ballymadagan, three turns of lime can be had from the shore, and three turns of turf from the mountain: it stands the farmer about 14*d.* per barrel. In the flag countries, the lime-stone is sometimes adulterated, by mixture of schistose mica; it is burned in wretched pot-kilns; its cost can hardly be computed. Greater exertions

in

in the use of lime, mixed with other composts, (principally bog) are making at present; the great defect of such compost is, its want of thorough mixture, before it is applied as a manure.

At Desartmartin, the reddish flag-lime is of excellent quality, but the soil immediately about it being generally light, its value as a manure is not so great; it is carried, however, for this purpose, up the vale of Ballynascreen, to a great distance through that country, until the lime from Sliabh-gallen becomes more convenient. In the mountains between Dungiven and Ballynascreen, they pay for the use of a bad kiln, *5s. 5d*; for the stone at the quarry, two guineas; but to compensate this, they can have 30 turns of turf in the day.

Shelling.

In an account of the manuring of land by sea-shells, as practised in the counties of Londonderry and Donegal, by his Grace the Archbishop of Dublin, communicated by Samuel Molyneux, Esq. Natural History of Ireland, page 161, we find the following passage.

" About 30 years ago, they made lime of the shells, and manured their land with it; but a poor countryman, that, out of laziness or poverty, had not provided to make lime, threw the shells unburned on his land; his crop proved as good as his neigh-

bours, and the second and third crop better; and all took the hint, and have used them ever since."

The shell islands, as they are called, are remarkable for two circumstances: 1st, they remain undiminished, notwithstanding the deductions; 2d, they shift their situation, owing, probably, to the force of the eddies, by which they are heaped together; the boats, which bring the shells to shore, carry from two to three tons, and require three men to work them: from 40 to 50 barrels are a freight; the distance from eight to nine miles. Six boats are employed almost the year round at the little port of Ballymurran; others are employed at Ballykelby. The shells are chiefly oyster, muscle, cockle, and cock-spur. The farmer generally bespeaks one or more boat-loads; he lands them himself, paying at the rate of 6*d*. per barrel of six bushels; the rest of his cost depends on the ability of horses, and the distance he has to draw them; two barrels form a load to a good horse; from 30 to 60 barrels are given to an acre; they also enter into composts, and are in great demand even in the interior country, from six to ten miles; which circumstance is the more remarkable, as many of those, who draw them up into their mountainous countries, are almost in contact with turf, lime, and marle. In examining the heaps of sand laid up for manure, I found them in great part minute fragments of shells; which, being lighter than

than basaltic or siliceous sands, are left, by the waves, spread uppermost on the beach; the black, or basaltic sand, is carefully rejected. The sand is taken also from the banks of the Bann, near a mile above the bar. Shells are spread on the lea from one to three years; it is a good plan, after spreading on wet ground, to trench it, laying up the earth on the shells. The first year of ploughing, they are turned in lightly; the farmer guards against burying them too deep, and, when he lays out his ground, wishes to have the shells brought up again to the surface.

Another species of manure is obtained in the sandy land by folding the sheep and yell cattle; it is also obtained by folding on lands inaccessible to the plough; this is dug off the corners of fields chosen for the purpose, where the mud is deep, and is annually replaced by the floods.

Trenching a spade deep of the mold at the interval of a ridge breadth, and throwing this over the grass at the fall of the year, is practised to open and manure the ground. This practice encreases the present vegetative power, and thereby food for future plants is also encreased.

In many parts of the country, particularly between the Foyle and the Fahan, I observed great exertions in burning peat for manure, obeying the classic injunction—

"Effoetos cinerem immundum jactare per agros."

The general practice is to make composts with ashes, scourings, and the moss itself; but in cases, where the compost has been exhausted, while the seed and the ground were ready, I have seen the heaps, still smoking, carried to cover the potatoes just kibbed, and the success is said to reward the zeal, with which it is done.

The pyritic nature of the rocks, of whose solution the soil beneath is formed, gives reason to think, that, along with the iron, sulphur may be an ingredient of the manure. Sulphate of iron is lately discovered to be a first-rate fertilizer.

At Ballymore, on the Roe, the peat bottoms are first burned, and then earthed; the ashes are red and heavy, containing a quantity of iron. If the soil is wet, it is first trenched; otherwise, it is only ploughed; with which management, it is able to produce a tolerable crop of potatoes; after this, it is covered with earth, shells, and dung: a crop of barley is then taken; then flax; then oats. If the ground is scarce, it is brought into croft; otherwise it is left out to gather weeds, under the denomination of lea.

Composts.

This is a general term, comprehending all sorts of collections for manuring. I have little to add, but that all alkaline matters, such as soaper's-waste, kelp-dross,

dross, &c. are now carefully preserved, and successfully used.

The value of peat is practically known as an accumulation of vegetable matter in a coarse state, which needs only to be reduced, in order to become fit for the nourishment of the finest plants.

Near Enogh, I saw the farmers top-dress the gravels with the quick peat-moss, drawn up from the bottoms. The addition of so much vegetable matter in such soil is of value.

Near Cumber, where cultivation is at the lowest stage, composts are in use within a few years. The stiff and cold soil is varied chiefly by hungry gravel and moss. The farmers are actively employed in drawing together the best materials.

Composts of bog should be long exposed and digested. In their natural state, they produce fern; in their digested state, they nourish clover, daisy, &c.

Irrigation.

Irrigation is only commencing, in the improved mode, at Ash-brook. The first good offer was lately made by a Gloucester man, brought by the Donegal Farming Society for the purpose. Among others, Mr. Waddy, rector of Cumber, has availed himself

himself of the talents of this very skilful irrigator. His plan is, after striking the levels and master-drains, to intersect these with other receiving drains at right angles; these are so managed, that water, taken off at the left hand, is, after a short fall, turned again to the right, and vice versa. Stop-sluices of whole deal serve to regulate the falls and levels. The price of this artists's labour is half a guinea per day; no money can be better laid out. He advises to level all inequalities, by either, 1st. cutting off the sods from the heights and laying them by, then cutting down the sub-soil, and transferring it to the hollow; afterwards replacing the sods, when all is level, in smaller inequalities; he nicks out with a spade, then takes slices off the height, and throws them to the hollow; the heights, when pressed down, sink of course, and the swarth pushes forth without much interruption.

This practice of watering had been known, but in a very incorrect way, long before. I have seen it even in remote mountainous meadows. About Derry, no one has been more industrious than Counsellor Scott. From Derry to Coleraine, how many fine declivities, intersected by constant streams of water, seem to invite this admirable process? The same remark applies almost to the whole county, furnished copiously by mountains with water, and shaped into slopes and levels, so frequently accessible

sible by this cheap substitute for those manures, which, by this means, may be applied to other cultivations. From March to May, is by some thought the best time for letting on water. It may be so; but nature shews, in what manner a perennial spring is diffused, changing even heathy wastes into verdant carpets, wherever this copious treasure is spread along. There is certainly an advantage in intermitting the process—it was known in the time of Virgil, as is evident from this passage—

"Claudite jam rivos pueri, sat prata biberunt."

CHAPTER V.

GENERAL SUBJECTS.

SECT. 1 and 2. *Towns, Villages, Population.*

Londonderry.

BEFORE I describe the present state of the city of Londonderry, I shall here present the reader with an extract from the Survey of the City, made by Mr. Pynnar, shortly after the plantation of the county in the year 1618. There was a survey prior to this, executed by Sir Josias Bodley; I believe the map of it is extant, but I have not been able to find the survey itself.

"The city of Londonderry is now compassed about with a very strong wall, excellently made, and neatly wrought, being all of good lime and stone; the circuit whereof is two hundred and eighty-four perches and two-thirds, at eighteen feet to the perch; besides the four gates, which contain eighty-four feet; and in every place of the wall, it is twenty-four feet high, and six feet thick. The gates

gates are all battlemented, but to two of them there is no going up, so that they serve to no great use; neither have they made any leaves for their gates, but make two draw-bridges serve for two of them, and two portcullices for the other two. The bulwarks are very large and good, being in number nine, besides two half-bulwarks; and for four of them there may be four cannons, or other great pieces; the rest are not all out so large, but wanteth very little. The rampart within the city is twelve feet thick of earth; all things are very well and substantially done, saving there wanteth a house for the soldiers to watch in, and a centinel-house for the soldiers to stand in, in the night, to defend them from the weather, which is most extreme in these parts. Since the last survey, there is built a school, which is sixty-seven feet in length, and twenty-five feet in breadth, with two other small houses; other building there is not any within the city. The whole number of houses within the city, are ninety-two; and in them there are one hundred and two families, which are far too few a number for the defence of such a circuit; they being scarce able to man one of the bulwarks; neither is there room enough to set up one hundred houses more, unless they will make them as little as the first, and name each room for a house."

Out of the Book of Howth, folio 104, and folio 177 being the last of the book of Howth.

"Five

" Five ye. greatest towns yt. were in ancient times in Ireland; that is to say, Ardmagh, Dere-Columb-kill, Drumcloo, Kells, in Meath, Fayle-mew." Under-written thus; Christopher Howth, his book. The capital of the county is still the city of Londonderry, which stands on an elevation, almost insulated, being connected with the county of Donegal, only by a bog and loaming flat, through which the river, to all appearance, has formerly found a passage.

The form of the city is that of a parallelogram, whose longest sides range from north-east to south-west, and the shortest, north-east to south-east.

It has four main streets, within the walls; each of these commencing at the Diamond, or public square, terminates at a gate, to which it gives its name.

The length of the city, within the walls, from Bishop's-gate to Ship-quay-gate, is 1273 feet; the breadth, from Ferry-quay-gate to Butcher's-gate, is 635 feet.

The main streets cross at right angles; the smaller streets and lanes, in general, follow the same arrangement.

The streets are well paved and lighted, but neither these, nor the roads, are sufficiently level, to make the use of carriages convenient; yet no place

is

is better supplied with all manner of equipage for the richer citizens.

The public edifices are, 1st, the cathedral, a fine specimen of architecture, in the gothic style, erected under the direction of Sir John Vaughan, in 1633. It is furnished with a good organ, and a ring of bells.

About twenty years ago, under the auspices of the present Bishop, the Earl of Bristol, a very beautiful spire of cut freestone was erected on the tower of the original steeple. Unfortunately, the weight of this erection has pressed upon the gathering of the arches, which were sprung to support it. The transverse beams are also drawn. The tower has cracked in several places beneath, and other damages have occurred, which render its present situation precarious and alarming. The congregation, considering it dangerous to assemble in the church, have service performed by their clergy, before the time of assembling the Presbyterian congregation, in the meeting-house, which is a specious building in the Doric stile.

The building, which serves for town-hall and market-house, was erected in 1692; it contains the mayor's office, the weigh-house, guard-room, and meal-market. Above these, are the courts of justice; one of these is occasionally a ball-room, or town-hall. These are supported over seven neat arches, the architecture of which is not without elegance.

There

There is a very capacious new gaol, outside of Bishop's-gate; the architecture is of the castle stile, mixed with the Gothic. The materials are quarry-stone, and free-stone.

There are also a Roman Catholic chapel, and a Seceding meeting-house.

A theatre has been lately built, and is occasionally in the occupation of the versatile disciples of the sock and buskin.

The private houses are not inferior to those of most other provincial capitals.

A linen-hall, shambles, fish-booths, may be added to the number of convenient erections. The quays, also, with the wharfs, and ware-houses, would not degrade any commercial establishment.

But the greatest ornament, and curiosity of Londonderry, is the bridge, of which a description will be found under the head of *Roads and bridges.*

The walls of Derry, once its strength, are now its ornament; they form the mall and parade. They are frequented by the beauty and fashion of the city, and, from various points, afford beautiful and extended landscapes of wood and water; there is nothing wanting but wood to complete the picture.

Londonderry, before the Union, returned two members; it now sends one to the Imperial parliament.

Coleraine.

I presume, that it will be interesting to many readers, to compare the state of this town, at the time it was surveyed by Mr. Pynnar, with its actual state at the present moment.

" The town of Coleraine," says Mr. Pynnar, " is at the same state it was at the last survey; there are but three houses added more to the building, which are done by other men; only the city hath allowed them twenty pounds a-piece towards their building."

" That part of the town, which is unbuilt, is so extreme dirty, that no man is able to go in it, and especially that, which should, and is accounted to be the market place.

" The walls and ramparts, built of sods, and filled with earth, do begin to decay very much, and to moulder away; for the ramparts are so narrow, that it is impossible they should stand, and the bulwarks are so exceeding little, that there cannot be placed any piece of artillery, if occasion were. There are two small ports, which are made of timber and boards, and they serve for houses for the soldiers to watch in."

" This town is so poorly inhabited, that there are not men enough to man the sixth part of the wall."

Modern Coleraine is still the second town in the county, as to extent and importance. Strictly speaking,

ing, the town is on the east side of the Bann, (see Appendix) but we usually reckon that part, called Captain-street, with the suburb of Killowen, as appertaining to the town itself. With this addition, we may reckon, from the upper gate of Jackson-hall to the termination beyond the King's-gate, to the length of about three quarters of an English mile. None of the transverse streets or lanes is of any considerable length, except that called the Gaol-lane, with its continuation.

In the centre of the original town, as it seems to have been laid out in the administration of Sir John Perrot, stood the public square, or market place: this is still laid out with regularity, excepting the height of the houses; those of modern erection being much more stately than those on the original plan, some of which are yet in preservation. It is said, that these houses were framed in London, in the reign of Elizabeth and James the First. This frame is of hard black oak, framed in what is called cage-work; the interstices were filled up with wicker-work and clay; some of which I have very lately seen in perfect preservation. According to the fashion of the day, these houses had pent ways, or piazzas; these have been built in front, but the roofs remain on one side of the market-place, or Diamond.

From each corner of the Diamond, a lane goes off at right angles with the main street; other streets or

lanes

lanes are ranged on the same plan, but none of these of any respectability except the New Row; the suburbs on this side of the river extend considerably on most of the outlets.

I have not been able to procure any accurate statement of the population: perhaps, with the suburbs, Coleraine may be rated at about 3800 souls. In Coleraine there is an excellent regulation of the shambles. The bell rings at eight o'clock in the morning, which is the summons for the butchers to bring in their meat; at nine it rings again, after which no more meat is admitted. Thus the buyer has a fair opportunity of seeing at once all that is to be sold. Before the Union, this town returned two members; since that, it sends no member to parliament.

Newtown-Limavady is a neat village; the main street is remarkably spacious. Added to this circumstance, the improved appearance of the fine country around, at first sight, brings to recollection the idea of no mean English village: neither its church nor market-house are conspicuously ornamental. There is one meeting-house in the town, and two near it. This borough returned two members, till, at the union, it was rated with others, that sent none.

Magherafelt is the next town of importance; it is the capital of the southern part of the county. It contains a suitable church and market-house.

Castle-

Castle-Dawson is agreeably situated in a fine country; it is, however, of no great consequence, even in the retail trade. It contains some good houses, built of stone, with the usual public edifices. It is the chief town in the district between Magherafelt and Kilrea.

Ballaghy is rather to be ranked among the villages, than towns. It is, however, the chief place in the Vintners proportion; has a neat parochial church, to which a spire has been added by a subscription, at the head of which is the Earl of Bristol.

Moneymore is pretty nearly of the same description; the appearance of the village is neat; lime and building stone are both convenient. The principal residents, in each of these two last-mentioned villages, are the gentlemen appointed as agents to the respective estates.

Kilrea is a town of rather more importance, particularly as to public edifices. It appears to me, that it can never arrive to any great consequence, because, if you except the confined district immediately around the town, it lies in a poor and rocky country.

Dungiven is the depositary or entrepot of the retail trade to a large district of mountain. I can say little else for it, except that it is seated at the head of a fine valley, and in a district capable of great improvement.

I shall not tire my readers by a tedious enumeration of every less considerable village, or collection

tion of houses. If I were to proceed in such a catalogue, I should certainly name, among the foremost, Tubbermore, Claudy, &c.

Market Towns.

1. Londonderry has two markets in the week; the principal one is on Wednesday; there is a smaller one for provisions on Saturday.
2. Newtown Limavady.
3. Coleraine.
4. Kilrea.
5. Castle-Dawson.
6. Magherafelt.
7. Moneymore.
8. Dungiven.
9. Maghera.
10. Garvagh.

Fairs.—c. f. means custom-free.

January,	1.	Castle-Dawson, c. f.
	do.	Lissane.
	4.	Moneymore.
	12.	Maghera.
	18.	Tubbermore.
February,	4.	Desartmartin.
First Thursday,		Muff.
	12.	Churchtown.
	13.	Tubbermore.
March,	3.	Swatteragh.
	29.	Newtown Limavady.
	do.	Tubbermore.

April,	21.	Castle-Dawson, c. f.
May, First Thursday,		Muff.
	8.	Desartmartin.
	do.	Moneymore.
	12.	Ballaghy.
	do.	Coleraine.
	do.	Killowen.
	do.	Lissane.
	15.	Churchtown.
	17.	Swatteragh.
	24.	Garvagh.
	25.	Portglenone.
	do.	Dungiven.
	do.	Magherafelt.
	31.	Tubbermore.
June,	1.	Castle-Dawson, c. f.
	7.	Desartmartin.
	14.	Maghera.
	do.	Newtown Limavady.
	17.	Londonderry city.
	23.	Curran.
July,	5.	Coleraine.
	do.	Killowen.
	do.	Tryadd.
	do.	Tubbermore.
	12.	Newtown Limavady.
	17.	Swatteragh.
	26.	Garvagh.
	28.	Desartmartin.

August	2.	Castle-Dawson, c. f.
First Thursday,		Muff.
	12.	Lissane.
	do.	Portglenone.
	16.	Maghera.
	24.	Churchtown.
	25.	Magherafelt.
September,	—	———————
October,	1.	Desartmartin.
	11.	Kilrea.
	12.	Maghera.
	18.	Londonderry city.
	20.	Tubbermore.
	25.	Dungiven.
	29.	Magherafelt.
	do.	Newtown Limavady.
November,	1.	Churchtown.
	5.	Garvagh.
First Thursday,		Muff.
	8.	Desartmartin.
	12.	Ballaghy.
	do.	Figivee.
	15.	Maghera.
	17.	Claudy.
	22.	Curran.
	26.	Lissane.
December,	3.	Swatteragh.

Population of the county.

According to Dr. Beaufort, this county contains 25,007 houses, within an area of 479 miles, Irish, or 798, English, averaging 4000 persons to each parish, 12.7 acres to each house, 50.3 houses to a square mile, comprising, in the whole, 125,000 inhabitants, at the rate of 5.06 to each house.

The city of L. Derry, according to Mr. Bushe's report in 1788, contained 1642 houses, at the rate of $6\frac{1}{4}$ to each dwelling, making 10,262 inhabitants; according to Dr. Beaufort, it contains 10,000 souls.

In 1800, according to returns, which included all the houses, that paid the window tax, and all that were exempt, it appeared, that the whole amount was 1154; the window tax amounted to £1200.

According to the information of my learned friend, Dr. Patterson, the city, with its suburbs, on each bank of the river, contains 1458 houses; at the rate of $7\frac{1}{4}$, the inhabitants would amount to 10,935. This estimate the Doctor thinks accurate, without including the pupils boarded at various schools, the paupers in the poor-house, or the military; reckoning these at 2700, the whole number of people inhabiting the city and suburbs, when garrisoned, would amount to 13,635.

My

My friend, John Mackay, Esq. of Prospect, in the parish of Ballyaghran, on the sea-coast, took the pains of furnishing me with an accurate statement of the population of that parish. I am sorry to say, it is too faithful a picture!

"There are, says Mr. Mackay, 1283 beings living, or rather existing, in dirt and filth, with bad fires, ragged clothes, and poor food. These are crowded upon each other in what are called towns, composed of miserable huts, which, with all other kinds of dwelling in the parish, amount to 241, at the rate of nearly $5\frac{1}{4}$ to each dwelling.

I subjoin an accurate statement of the population of my own parish.

Population

Population of Aghanloo.

	Houses.	*Persons.*	*Servants.*
Ballycartin,	9	44	1
Ballymeglin,	6	28	3
Shanvy,	9	40	7
Refad,	6	34	5
Drumbane,	18	79	13
Ballyhendry,	17	81	18
Dowling,	7	38	2
Crossycrib,	4	20	0
Ballycastle,	21	108	16
Freehall,	14	73	1
Ballymoney,	6	29	6
Drumadery,	9	43	9
Killabreda,	10	50	1
Stradreagh,	40	193	11
Largantea,	11	48	1
Dirtaugh,	28	119	6
Drumclief,	10	59	7
Artikelly,	58	277	18
Grannaugh,	10	45	6
Clooney,	5	20	6
Carbullion,	8	45	12
Ballyhanna,	2	10	2
Lisnagrib,	15	63	5
Total,	323	1546	156

Which

Which is nearly at the rate of $5\frac{1}{4}$. One of these parishes being on the coast, and the other inland, a datum is thence afforded, which may be extended, perhaps, to the calculation of the population of the county.

Sect. 3.

Habitation, Fuel, Food, &c. of the lower Rank.

Cottiers.

There cannot be a more satisfactory mode of reporting the state of this class of society, than by laying before the reader some instances, taken from different parts of the county.

Near Cross, in the vale of the Fahan, at Gortnessay, the cottier gets half an acre of second crop for flax. Again, in the same district, half an acre of oats, one rood of flax, and miserable pasture for a cow.

Near Bond's-glen, on the Fahan, a cottage without *biar*, (cow-house) with half an acre of second crop for oats, the land prepared; half a rood of flax ground, prepared; ten perches of garden, with land to draw his dung on, for potatoes; pasture, or rather starving, for a cow. This sort of *tack* has lately been raised from three to five guineas.

In the freeholds of Tully, the half tack, that is, without land, consists of a house, garden, and rood

of

of lint, with bad grass for a cow. This now pays five guineas.

At Slagh-manus, a mountainous district, one acre of land, house, garden, a rood of flax, and grass for two cows, costs seven guineas.

In Myroe, a house, garden, two cows grass, with a pack of flax, six guineas.

At Derrybeg, in the freeholds of Newtown Limavady, the cottier gets a mud cabin, a small garden, and a cow's grass along with the farmer's cow, for three guineas.

In Artikelly, a small house, with one acre of land, pays from two to three guineas.

On the west bank of the Roe, approaching to Dungiven, where the soil is coarse, the cottier has a bad cabin, and worse grass, for two guineas.

In Ballyaghran, and the liberties near the coast, the cottier has a cabin, small garden, with wretched grass for one cow, at three guineas per annum.

Near Desartmartin, the cottier holds one Irish acre, house, garden, and cow's grass, for which he pays four guineas.

At Largan-a-goose, not far from Castle-Dawson, where the soil is hungry gravel, the cottier is a kind of under tenant, holding three acres and a quarter, at the rent of £4, 16*s*.

These instances may be sufficient to shew the unfortunate condition of this description of men.

In

In the rugged country of Tamlaght-o'-creily, a little hovel, with coarse grass, and a small thing called a garden, added to one acre of ground, is let at four guineas per annum.

In Ballynaschrehen, on Mrs. Cary's land, two acres and a half, with four sums of mountain pasture, value about 25*s.* are let at four guineas: one acre, half a rood of garden, with a cabin, and bad grass for two cows, at three guineas.

In many districts, the cottier could not hold out but for the liberal wages of linen merchants, and other gentlemen. I know instances, where the farmers, calculating, not on the value of his land, but on the earnings of the poor man, have lately raised the tack from three to five guineas. In some places, the cottier is obliged to work, when called on by his landlord, at the rate of 6½*d.* per day with diet. It is not unusual for cottiers, who have families of industrious females, to take larger portions of flax ground. The farmers sometimes bring home the cottier's turf, for which, if inconvenient, he is paid by a day's work in harvest and other pressing times.

The ground prepared for a *cog*, or peck of flax-seed, is valued by the farmer at seven days *shearing*, i. e. reaping. The drawing home of a cage of turf is rated at one day's reaping, if the distance be four or five miles.

To

To shew how eagerly the farmer is following up some examples of rack-rent agents, I assure the reader, that the grass of a cow, which, three or four years ago, was valued only at 20*s.* is now raised to two guineas, even on the bare moors, where the poor animal is *tethered*, and where she has better opportunity of grinding her teeth on the sand, than of filling her belly with pasture.

Houses of small Farmers and Cottiers.

The best are divided into two apartments, the inner of which is without a fire-place, and serves for the sleeping and storing room. In countries, where stone is convenient, it is used in building them; in general, the cement is only mud. These are cold in their nature, and not the less so, when, according to the usual plan, the back door is exactly opposite to the front door. You can tell the prevalent fossil of the district, by examining the walls of the cottages. The finest parts of the country, and, perhaps, of all countries, are those where stone is not to be had. In these districts, mud, with straw or rushes, called, provincially, *cat and clay*, is used, except for the better houses, which are formed of brick, or of the stones most easily to be had.

There is a remarkable distinction in the plan of the houses on the Antrim side of the Bann. The fire-

fire-place is advanced some feet from the gable-wall, so that the persons of the family can nearly sit round it; it seems to mark a difference in the time or colonists of the two counties. I did not perceive any inconvenience as to smoak in these last-mentioned houses; at least, not so great as in the common chimnies on the Derry side. Very many of these are without any brace, and, consequently, the hovel is generally in such a state, that the eye is galled, and the looks and apparel of the inhabitants greatly sullied; besides this, every article of food, especially butter, is nauseous, except to those who, from long habit, have their palates habituated to such flavour. There is nothing worthier of the beneficent attention of proprietors, than the erection of such cottages, as would reconcile cheapness and comfort. These would serve as models; and, without example, what signifies preaching? A few deals cut into four leaves, and then sawn into laths, with brown paper pasted over the vacant places; these connected by four pieces of wood, two of which should lie against the wall, the other two joined with an angle, and projected beyond the current of the smoak about four feet; this is all the contrivance necessary to keep a cottage free from smoak. If the family are tall, it may be proper to keep this (which I call a box chimney) somewhat high, in which case, some coarse canvas or sacking must be attached below, in the

way

way of a flounce or curtain. I have tried what I propose, and found it to answer; the expence, less than half a guinea.

In districts, where lime is plenty, the cabins are whitened, and even rough-cast. It happens, that in some wild mountains you find the little towns, from this cause, have an air of superior neatness, even where there is scarcely the trace of a road. In other places, where the soil is rich, without lime or stone, the cabins are degrading to the farmer; for I cannot help thinking, that the inhabitant will derive some part of his domestic character from the neatness or filthiness of his habitation.

What I now advance is not without application to parts of Myroe. Several of the houses are as antient as the first settlement. Though of mud, the couples rest on perpendicular timbers, called couple-feet; these are of glen-oak, and are in perfect preservation. The old ones have been occasionally taken down and renewed, the roof still standing on these timbers.

I have taken pleasure in contemplating on the antient oak furniture of some old families, the state of carving and the ideas of convenience in fashion among the rich forefathers of some, whose monuments of this nature are a reproach to their own slovenliness at the present day.

Expence

Expence of building a Mud Cottage.

			£.	s.	d.
To 3 bay of mud-work, ready for roofing,			3	8	3
To straw, laid in to the workmen, for mixing with the mud.			0	3	4
			3	11	4
	s.	d.			
To 2 couples of birch,	7	7			
To 27 ribs, at 6½d,	14	2			
To wattling, brought home,	4	4			
To binding couples,	5	5			
To other work,	2	2			
			1	13	8
To 1 door and case of deal,	8	8			
To 2 lead windows, 18 inches by 12	4	8			
			0	13	4
To straw for thatching, drawing straw, 100 sheaves, at 2d.	16	8			
To scallops, for ditto, at 8d. 3 hundred,	2	0			
To thatcher, 6 days, at 1s. 7½d.	9	9			
Labourer, at 1s. 1d.	6	6			
Scraws and divets,	10	10			
			2	5	9
Total,			8	4	4

Fuel.

Fuel.

Coal is but little burned in the country parts; the coal of Ballycastle is brought on Saturday, the market day, to Coleraine, by carmen; 5 cwt. is a load; 8 barrels to the ton; sold from 2*s.* to 2*s.* 8*d.* per barrel.

The carman takes any return, which he can get, homeward; his time is, one night and a day. This fuel is sometimes used in the country parts, the turf being hard to procure, and the bogs wearing fast out, but the quality is not good; some veins are full of martial pyrites, and, of course, stink of sulphur; others doze away after a blaze, into a white slate, being of too argillaceous a nature.

Coal is the principal fuel in the city of Derry, and in some few houses in its neighbourhood; but it is only so with the better classes, for the poor have not yet learned how to use it. In Derry, the price varies, from 17*s.* to 30*s.* for Liverpool coal; about one-quarter less is given for Scotch coal.

Turf.

This is almost the universal fuel of the country in the open districts, which have been for a long time thickly inhabited. The peat-mosses, most conveniently situated, are, in some places, totally, and in others, nearly run out. In such situations, when the turf no longer bears to be cut, it is collected into

into heaps of wet mire, baked, shaped by the hand, and afterwards spread to harden. These are called baked turf, and form but very bad fires. In Myroe, even this substitute for fuel is almost exhausted. The farmers are obliged to look for their supply in the high turbaries, in mountains four, five, and six miles distant.

In the same state of inconvenience are the inhabitants of the coast, and of the vale of the Roe; nearly one-quarter of the year laboriously employed in cuting, handling, dragging,* and drawing home fuel for the other nine months. It is in vain to preach to the inhabitants of Myroe, how much cheaper they might have their fuel of coals landed on the beach, even at two guineas per ton, if the time, so laboriously employed for themselves and their horses, was but moderately applied, in preparing composts and turning fallows. Those of the middle heights, on the declivities of mountains, and even in the flat country, lying under the abrupt precipices of Benyevenagh, and his fellow promontories, use slide-cars; these are dragged by small active horses through winding ruts, which are several yards deep in the soft places, and are, in other rocky tracts, so nearly

* *Dragging* turf, is the carrying of it from the place where it is winnowed (provincially won) to the hard road; for this purpose, slide-cars are used in soft bogs. Three slide-car loads make one cage, and that should contain the turf cut out of one cubic yard of good peat-moss.

perpendicular

perpendicular, that one is astonished at the venture and escape.

Providence seems to have compensated the dreary exposures of our mountains, by affording to them such plenty of turbary. This inducement, contrasted with the difficulties, which the poor man meets in the attempt at providing fire for his family in the low countries, has allured a crowded population to every arable spot, however remote and exposed, where the turf-bog is in plenty.

Thus, in the very highest of the rocky heaths, above Grace-steel and Muff, or, in the almost trackless mountains behind Learmount, little townships are either added, or encreasing. In these retreats of laborious poverty, unexpectedly we chance upon some genial nooks; and when any such patches occur, it is surely an interesting spectacle, to behold the successful zeal, with which the mountaineer is hourly adding to the triumph of the plough.

When roads shall have been effectually opened through these unnoticed tracts, much more will be done. The value of bog will be known, and emigrations to the districts of potatoes and good fields will succeed to those beyond the Atlantic.

At Derry, the poor are supplied by small sacks, (better say bags or pillow-cases) brought from the mountains on the backs of diminutive horses: a quantity

tity, which would scarcely supply a good kitchen with a day's fuel, is sold at, from 1*s.* to 1*s.* 7½*d.*

The better classes buy from Mr. Scott's boats, or turf-house, or from those of other proprietors of bog, on the shores above and below the city.

At Newtown, a cage of mountain turf, which would hardly guage, in its loose state, three cubic feet, is sold in the street at, from 1*s.* to 1s. 6*d.*

Coleraine is a little better supplied, because its turbary is more convenient; but this is likely to fail in no very distant time.

I saw a good plan, which was the boating of turf in the flat bog, west of Coleraine. Every flow-bog could supply a canal, which, like the gang-way of a mine, might serve to bring back all that was cut out in the track of its progress. How many flow-bogs might thus land their turf on solid ground, whilst, at the same time, draining might be forwarded for the first processes of reclaiming?

The black mountain turf, under the first paring, is, when in its driest state, heavier than coal; it has red ashes, and makes good manure. The smiths charr it in heaps; it is better for iron than coal, which abounds with sulphur, and mineralizes the iron.

Bog-fir is used in rich houses, as a substitute for Kendal coal, and an excellent one it is; in the poor man's cot, it is cut up in *splits*, not thicker than the blade of a knife, and is managed on the hearth,

so as to continue a long time giving light to the thrift of a winter's night.

Sect. 4.—*Prices and State of Labour.*

It may be generally, and with truth observed, that the division of labour is not yet sufficiently attended to; thus, the same tradesman is a mason, slater, brick-layer, and labours with the spade. The weaver also, at certain seasons, becomes a labourer. This is the case in the infant state of arts in every country. In this county, I can assign a local cause for its continuance; instead of being in the hands of farmers, it is parcelled almost into cot-tacks. The tiller of the soil consumes a large proportion of his own product, and if his crop fails, he is able to consume even more than his own. The tradesman and labourer, as soon as they are family-men, require a cow; for this cow fodder must be had, which is chiefly oaten straw; the manure from this lies at their door, and no wealthy farmer is at hand to tempt them by a large price for the dung-hill. Added to this negative cause, there is a positive one; every poor man thinks, when he is not actually laying out money, he is not in the way of impoverishing himself; he counts little on his own exertions; if, therefore, he has the dung, and can get the

the ground for nothing, all seems right; his potatoes come in without money being expended; he is also certain, in some degree, of a future provision, let markets take what turn they may. Added to all this, I really believe, that man is so naturally a tiller of the earth, that the occupation, as well as the acquirement of agriculture, are, above all others, the most captivating and consoling.

After this general reflection, I shall give all the particulars, which have come to my knowledge.

The best carpenter gets, per day, from 3*s.* 3*d.* to to 3*s.* 9½*d.*

Inferior carpenters, from 2*s.* 2*d.* to 2*s.* 8½*d.*

Masons are at the same rates.

In, and near the large towns, daily labourers receive from 1*s.* 1*d.* to 1*s.* 7½*d.* per day—some few give drams, no other addition. In the same situations, the hire of a man, horse, and car, is from 3*s.* 3*d.* to 5*s.* 5*d.* per day.

In country places, adjacent to bleach-greens, the worst hands, or boys, receive 6½*d.*, and the best, from 10*d.* to 1*s.* 1*d.* per day, without addition. The season for bleaching, with those of turf-cutting, potatoe-planting, harvesting for themselves and employers, is sufficient to keep them engaged almost the year round. These labourers are either the sons of small farmers or cottiers, or, if unmarri-

ed, they are sometimes lodgers in the convenient cottages.

The labourers belonging to farming, are either 1st. servants hired with the farmer, and lodged and boarded in his house; their wages fluctuate, according to market, from two to four guineas by the half-year; the 12th of November and the 12th of May are the times of hiring, and the Monday next to these terms is, in our neighbourhood, on account of the display and changing of the servants, called *galloping Monday*. 2d. Cottiers, bound to the farmer for so many days work in pressing seasons, at the rate of 6½*d.* per day, with meat; at other times these labourers work for themselves, at their potatoes, flax, &c. or else for others occasionally, at from 9*d.* to 11*d.* per day, without meat, or, in harvest, with meat. Gentlemen usually settle about themselves as many cottiers, as are sufficient for their usual work; to these they allow from 7*d.* to 8*d.*, and in summer 9*d.* per day, supplying constant work the year round. In addition to this, they generally have a cabin, with a sort of cow's grass. Some draw out their manures, free of expence, to their own grounds, for the cottier's crop of potatoes.

We have a distinction of labourers, whom we call *costneute*, (from the old Norman French, no doubt, *cost-neante*, meaning cost nothing); these get no

diet, and receive from 7*d.* to 10*d.* per day, all the year round. In winter, they generally get 1*d.* per day less than in the *summer* half-year, as it is called.

There are also jobbing labourers, who take work by the piece. These are hard workers; the usual work, with the rates, is,

	s.	*d.*
Trenching the furrows of ploughed land, (a good day's work half an acre) plantation near towns, per acre,	6	6
In other places,	4	4
Ditching, four feet deep, thrown up six feet high, six feet wide, per perch, of 21 feet, a day's-work one and a half perch, if easy ground,	1	1

Almost all other works are done by the whole piece or, as it is said, by the lump.

Provisions.

I am indebted to my friend, Dr. Patterson, for the following communication.

RATES OF PROVISIONS, &c. IN THE YEAR 1800.

TABLE 1st.

Months.	Beef, lb.		Mutton, lb.		Veal, lb.		Oaten-meal, peck, 10 lb.		Barley-meal, peck, 10 lb.		Potatoes, stone, 14 lb.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	
May,	10	8	10	6	12	11	40	39	31	30	—	—
June,	10	5½	7½	4¼	10	6½	48	35	36	—	13	—
July,	10	4½	7	3½	10	6½	54	35	41	36	19½	—
August,	6½	4	6	4	8	7	48	39	29	27	10	9
Nov.	4½	2½	5	3½	—	—	27	26	17½	17	8	7
Dec.	4½	4	6	4	13	—	36	32½	26	20	8	—

TABLE,

TABLE. 2d.

Months.	Oats, stone, 14 lb.		Fresh Butter. lb.		Salt Butter, lb.		Rough Flax, lb.		Hackled Flax, lb.		Tow, lb.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
May,	—	—	16	15	12	11½	7½	6	17	16	7	6½
June,	—	—	14	13	12	10	7½	—	17	16	7½	—
July,	37	—	12½	12	11½	—	7	6½	15	14	6½	—
August,	—	—	18½	16	15	—	7	—	14	—	—	—
Nov	—	—	16	—	14	—	7	6½	14	13	—	—
Dec.	—	—	18	16	—	—	—	—	—	—	—	—

RATES

RATES OF PROVISIONS, &c. IN THE YEAR 1801.

TABLE 3d

Months.	*Beef, lb.*		*Mutton, lb.*		*Veal, lb.*		*Oaten-meal, peck, 10 lb.*		*Barley-meal, peck, 10 lb.*		*Potatoes, stone, 14 lb.*	
	Max.	*Min.*	*Max.*	*Min.*	*Max.*	*Min.*	*Max.*	*Min.*	*Max.*	*Min.*	*Max.*	*Min.*
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
Feb.	8	6	12	10	12	—	42	38	30	—	11½	11
March,	8	6	10	6	13	10	46	42	34	32	12	11½
April,	12	6½	10	4½	13	10	42	—	32	—	—	—
May,	9	5	9	5	10	8	32½	28	24	—	—	—
June,	9	6	8	4½		8	32	30	22	—	11	—
July,	7	5½	7	4	6½	4½	32	31	22	—	11	—
August,	6	4	6½	3		4	32½	19	15	11	6½	3
October,	5	3	5	3¼	10	6½	16	14	11	—	3	2½
Nov.	4½	3	6	3½	—	—	15	14	—	—	3	2½
Dec.	5	3	6¼	4	11	—	16	15	—	—	3½	3

TABLE

TABLE 4th.

Months.	Oats, stone, 14 lb.		Fresh Butter, lb.		Salt Butter, lb.		Rough Flax, lb.		Hackled Flax, lb.	
	Max.	Min.	Max.	Min.	Max	Min.	Max.	Min.	Max.	Min.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
March - - -	—	—	18	16	14	—	7	—	16	14
April - - -	—	—	16	—	10½	—	6½	—	14	13
May - - -	—	—	12	9½	12	—	7	6½	16	14
July - - -	20	18	11	8	9	8	—	—	—	—
August - - -	13	11	13	11	11	10	9	5½	16	15
October - - -	—	—	13	12	9	—	8	6	18	14
November - - -	—	—	11	10	9	—	7	6	15	14
December - - -	—	—	11	—	9	—	8	7	16	15

ATES OF PROVISIONS, &c. IN THE YEAR 1802.

TABLE 5th.

Months.	Beef, lb.		Mutton, lb.		Veal, lb.		Oaten-meal, peck, 10lb.		Potatoes, stone, 14lb.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
January - - -	6	4	6	4	11	9	15	14½	3½	3
February - - -	7½	4½	8	4½	12	8	14½	14	3¼	3
March - - -	8	4½	12	4½	10	8	14	13½	3	—
April - - -	9	5	9	5	13	10	14½	14	3½	3

TABLE

TABLE 6th.

Months.	Fresh Butter, lb.		Salt Butter, lb.		Rough Flax, lb.		Hackled Flax, lb.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
	d.	d.	d.	d.	d.	d.	d.	d.
January - - - - - - - -	13	12	9	—	7	6½	15	13
February - - - - - - - -	13	12	9	—	8	7	17	16
March - - - - - - - -	12	—	9	—	9	—	18	16
April - - - - - - - -	12	—	9½	—	8	7	16	15

Miscellaneous Notices of the Rates of Provisions and of Labour, in the Year 1800.

"*May.*—Lamb from 2*s.* 2*d.* to 5*s.* 5*d.* a quarter; ducks from 13*d.* to 14*d.* each; eggs, 2*d.* for five; coarse linen yarn from 3*s.* 3*d.* to 3*s.* 3½*d.* a spangle; fine ditto from 3*s.* 4*d.* to 3*s* 6*d.* a spangle.—*June.* Lamb from 2*s.* 2*d.* to 3*s.* 3*d.* a quarter; eggs from a halfpenny each to three a penny; flour from £2, 8*s.* to £2, 16*s.* per *cwt.*; wheaten-meal, 3*s.* 11*d.* a peck of 10*lbs.*; between two and three spangle yarn, 3*s.* 3*d.* a spangle; brown linen, a little more than 13 *hd.* 2*s.* 10*d.* a yard.—*July.* Lamb from 3*s.* 3*d.* to 4*s.* a quarter; new potatoes 4½*d.* a pottle, and from 13*d.* to 19½*d.* a stone; linen cloth and yarn fell considerably; 11 and 3 *hund.* 7-8ths wide, now 20*d.* per yard, were a short time before at 2*s.* a yard.

A considerable supply of oats, oaten-meal, wheaten-meal, and flour, arrived in the middle of July, before which, as may be seen in the first table, oaten-meal was 4*s.* 6*d.* a peck. The latter end of July, a schooner, burthen 150 tons, arrived with a cargo of Indian corn, on account of Government. New potatoes, 13*d.* to 15*d.* per stone; York flaxseed 17*d.* per gallon, and five guineas a hogshead; Dutch seed 14*d.* to 15*d.* per gallon, and four guineas a hogshead;

Riga

Riga, the same price.—In *November*, geese were 2*s.* 8½*d.* each; widgeon 2*s.* 8½*d.* a pair; cured salmon, 2½*d.* per *lb.*; heavy yarn, 2*s.* 10*d.* a spangle, and light ditto, 2*s.* 7*d.* a spangle.—In *December*, new milk, 3*d.* a quart; fresh salmon from 7*d.* to 8*d.* per *lb.*; best cod-fish, 13*d.* each; rabbits, 10*d.* a couple; pork, 5*d.* to 6*d.* per *lb.*; eggs, 2*d.* each.

Within the city and liberties, the hire of a horse and car was 5*s.* 5*d.* per diem, and the wages of a day labourer 1*s.* 7½*d.* as appointed by the Mayor. In the neighbourhood of the town, a day labourer in general got only 9*d.* or 10*d.* a day, without meat; at an erection of new bleach-works, experienced labourers got 13*d.* and young lads got 6½*d.* per diem, without meat."

Miscellaneous Notices of the Rates of Provisions and of Labour, in the Year 1801.

"*March.*—Indian corn meal sold for 2*s.* 6*d.* the peck of ten pounds; meal, under the denomination of rye-meal, sold at from 3*s.* 4*d.* to 3*s.* 6*d.* a peck; flour at the city mills, Pennyburn, rated as follows: First, £2, 8*s.* 6*d.*; second, £2, 3*s.* 6*d.*; third, £1, 18*s.* 6*d.* per *cwt.*; linen yarn, from 3½ to 4 hanks, 2*s.* 6*d.* a spangle; coarse brown 3-4ths wide linen much fallen in price. Spinners in general cannot earn more than from 2*d.* to 3*d.* a day.—*April.* Lamb from 2*s.* 2*d.*

2*s*. 2*d*. to 4*s*. 10½*d*. a quarter; rye-meal, 2½*d*. per *lb*.; 19 spangles of heavy 3 hank yarn, now at 2*s*. 10*d*. a spangle, would make 50 yards of 12 *hd*. cloth, for which would be got from 2*s*. to 2*s*. 2*d*. per yard; stuff for boiling and bleaching the yarn would cost 7*s*. 7*d*.; weaving a guinea.—*May*. Lamb from 6½*d*. to 8*d*. per *lb*.; new potatoes, the 25th of this month; brown linen, 11 *hd*. from 1*s*. 7*d*. to 2*s*. per yard; coarse narrows from 8*d*. to 11*d*. per yard; barm, 2*s*. 2*d*. per gallon.—*June*. Lamb from 5*d*. to 6½*d*. per *lb*.; Indian corn meal, 2*s*. a peck.—*July*. New potatoes from 9*d*. to 13*d*. per stone, plenty, large, and good; chickens from 8*d*. to 13*d*. a couple: the first summer herrings, from Lough-swilly, in good order, were on the 17th of this month, at 1½*d*. each; herrings came also very fresh from the Isle of Man, and were sold at 6½*d*. per dozen, and 5*s*. a hundred; plenty of lobsters from the coasts of Donegal; fine Malin cod at from 1*s*. to 3*s*. 3*d*. each; flounders, very large, at 6½*d*. each; rye meal, 42*s*. a barrel, containing 196 *lbs*.; Indian corn meal, £1, 15*s*. 2½*d*. a barrel, of the same weight; brown linen, 3-4ths wide, from 7*d*. to 13*d*. a yard; 7-8ths brown linen from 16*d*. to 24*d*. a yard.—*August*. Lamb from 3½*d*. to 4½*d*. per *lb*.; new barley meal, 22*d*. per peck; rye meal, £1, 14*s*. 1½*d*. a barrel; Indian corn meal, £1, 5*s*. a barrel.—*September*. Oaten meal fell to 16*d*. a peck, and potatoes to 2½*d*. and 3*d*. a stone;

at

at the same time, barley meal was 11*d.* a peck.—*October.* Indian corn meal, 10*d.* to 11*d.* a peck; potatoes were not only abundant, but in general unusually large; one, that grew a few miles north-west of the town, weighed 24 ounces; a cod, weighing 32 *lbs.* was bought for 3*s.* 3*d.*—*November.* Indian corn meal, by the peck, 11*d.* by the barrel, from 11*s.* 4½*d.* to 15*s.*; fresh salmon from 8*d.* to 8½*d.* per pound: the latter end of this month, brown linen bore a good price; three-quarters wide were from 11½*d.* to 15*d.* a yard, but their great body was from 11½*d.* to 12*d.* per yard; seven-eighths were from 18*d.* to 24*d.* a yard, and their great body from 18*d.* to 22*d.* a yard. In the summer of 1799, five hank yarn, or a little finer, would make 7-8ths cloth, which then sold for 3*s.* 6*d.* a yard, which judicious weavers thought above its value, and therefore eventually hurtful to the linen trade.

During the winter 1800 and 1801, and part of the succeeding spring, labourers in husbandry wrought for their meat and about 4*d.* a day; they are engaged during a year at 8*d.* a day. A few miles south-west of Derry, in the winter half year 1800, the wages of farmers servants were £2, 15*s.* and, in the preceding winter half year, the wages were £3, 12*s.* In the same neighbourhood, day labourers preferred begging to taking less than 6*d.* a day with meat; 4*d.* a day they refused."

SECT.

SECT. 5.—*State of Tythe, &c.*

See under the title, *Cesses.*

SECT. 6.

Use of Beer and Spirits—Which is encreasing?

Beer is little used in proportion to whiskey, the universal cordial beverage and regale.

SECT. 7.—*State of Roads, Bridges, &c.*

The old roads of this county have the fault of all their cotemporaries, before the deep secret was discovered, that it is frequently a shorter, and always an easier way, to pass round the base of a steep hill, than to climb over its summit. The foot-path was followed by the *bridle roading;* to this the slide-car track succeeded; and, from the slow succession of improvements in a district, which the linen trade alone has rescued from poverty and obscurity, it was much easier to mend a bad road, than to originate a good one.

Within

Within these few years, several useful lines of road have been made; and certainly that of the first merit is the low and level way completed by Mr. Scott, between Londonderry and Walworth. I could wish to say, that the other line of road, leading through the flats of Myroe and Magilligan, was planned and executed with equal judgment; but whatever be the cause, there seems to have been in the direction of this road something like an abhorrence of the rectilinear.

The new track, which is to connect Newtown-limavady with Coleraine, through Maycosquin, will be of the greatest advantage in opening a new vein of country; but after all, would not a line drawn from the turn below Streeve, through Derrybed, Dunmore, and thence to the bog, west of Coleraine, be, by far, the cheapest to the county, and the shortest and the easiest to the traveller?

I have seen no country more intersected by good roads, than the neighbourhood of Kilrea and Magherafelt. Near Ballaghy, there is little gravel; the roads are, however, made very durably there, and in other districts similarly circumstanced, by breaking down the basalt stone. The softer matters of the same nature, such as that called rotten rock, (zeolitic trapp) is also no bad material. The new road, conducting to the bridge at Toom, is among the most magnificent undertakings of this kind.

About Coleraine, and along the Bann and the coast, where hard gravel is not easily had, several roads are composed of the breakage of the basalt, which, though it is crumbled to the size of gravel, yet has been very little subjected to the rolling in water, and, consequently, has little of its softer parts washed away. The hard basalt stone is also used in this country.

A very excellent plan has been resorted to, for lowering the road through the bog of Coleraine; it deserves to be generally known. The bog had been cut away, through length of time, many feet below the surface of the road, which was thus left as a narrow causeway; and the sides of this causeway were worn away by the dragging of the turf cars from the bog below. From this very dangerous condition it was relieved by the following plan. The gravel being raised, and thrown to one side, on half the road, the foundation was spread; the road lowered of course. After this, the same gravel was returned; the other half was next managed in the same manner.

In various parts of the county, great improvements are going on; some consist in levelling hills, and filling hollows with the materials; others in widening and straightening; and others, than which none can be more useful, in opening new communications through districts hitherto savage, which may, one day,

day, be improved, and which, in the mean time, will convenience the thickly inhabited districts.

Bridges.

It would be unpardonable not to mention that of the city of Londonderry in the first place.

This bridge was constructed by Lemuel Cox, of Boston, in North America; it was completed in the space of 13 months; in length it is 1068 feet, in breadth 40 feet; the piers consist of oak, from 14 to 18 inches square, and from 14 to 58 feet long; the head of each post is tenanted into a cap-piece, 14 inches square, and 40 feet long, supported by three sets of girths and braces; the piers, which are distant from each other 16½ feet, are bound together by 13 string-pieces, equally divided, and transversely bolted; on the string-pieces is laid the flooring; to each side of the platform is affixed a railing, 4½ feet high; inside railings are also made to guard the foot-passengers; 26 lamp-posts are arranged along the sides of the bridge.

Between the middle of the bridge and the end next the city, a draw-arch has been constructed, of which all the machinery is worked under the floor of the bridge. The greatest depth of the river at low water is 31 feet, and the rise of the tide is from eight to ten feet.

The construction of a bridge over this river had long been a favourite object with the present Bishop of Derry, (the Earl of Bristol) by whom, for this intent, the model of a wooden bridge had been brought from Switzerland. Plans by Mr. Milne and Mr. Payne, of London, had also been under consideration for the same purpose. Mr. Coxe's bridge was opened for foot-passengers in the latter part of the year 1790.

A bridge on the same plan has been constructed over the Bann, opposite Aghgivey, by a Mr. Mitchel, of this county.

Others, somewhat on the same model, but diminutives, have been laid across rapid rivers, where stone bridges had often been attempted without permanent success. But for such situations, without doubt, that construction is the best, which is hung over the channel, without any piers, which always obstruct the torrent, and endanger, of course, the whole bridge. Of this kind, one over the Fahan, contrived under the direction of Mr. Acheson, seems to be safe, solid, and not without an air of neatness, and even of some picture. It is hung on its own banister by means of braces and beams, the uses of which might be better understood by an inspection than by a concise description.

The bridge of Coleraine, over the Bann, is of wood and stone; the piers of stone; the flooring, spur-

spur-pieces, and railing, of wood. Over the flooring lies a bed of gravel, and pavement over this. It is neither strong, elegant, nor convenient.

Among our stone bridges, that of Toom, erected by the late Lord O'Neil, though it belongs more strictly to the county of Antrim, yet is too usefully connected with Londonderry, to be entirely unnoticed. Suffice it, however, to say, that it was built under an act of parliament, conferring the toll on Lord O'Neill, and that it is an erection equally beautiful and solid.

There is a strong and neat bridge lately built over the Roe, by Mr. Gage, at the expence of the county. It consists of stone piers, covered and railed with timber.

SECT. 8.—*Navigations and navigable Rivers.*

A canal might be opened through the low grounds, which separate the loughs, Swilly and Foyle. The distance is about four miles, quite level.

Another canal might be opened to Newtown-limavady from Ballymacran; the distance about two miles. I shall not hazard any conjectures on the utility of such projects.

As to navigable rivers, consult the 6th section of the 1st chapter.

Sect. 9.—*State of Fisheries.*

We find, in the survey before that of Captain Pynnar, which I take to be that of Sir Josias Bodley, the following particulars concerning some fisheries of Londonderry.

"The moiety of the fishing of the Bann, unto which moiety, as likewise unto the other moiety, the assignees of Sir William Godolphin make claim, by a lease for 21 years, made the 42d. of Elizabeth, which lease hath been in question, and allowed by the state in Ireland, and the assignees of John Wakeman do claim the fee simple thereof, by letters patent, dated the third Jacobi; and the Lord Bishop of Derry claimeth one days fishing, viz. the second Monday after Midsummer-day, in the river of the Bann, and likewise the fishing of the wear of Ballinasse, which, notwithstanding, was granted by letters patent to Thomas Ireland, and by him assigned to Sir Thomas Phillips, who is now in possession thereof.

A small salmon fishing in the river of Roe, which is in his majesty's possession.

A small salmon fishing in the creek of Foughan, falling into Lough Foile, in his majesty's possession.

Certain small pools for fishing in the south-side of Lough Foile, in the king's possession. But the Lord Bishop of Derry doth claim a pool, called Clonye."

At

At present, the principal fisheries are those for salmon on the river Bann, and at the Rosses-bay, at Culmore, on the east side of the harbour of Derry. There is also an inconsiderable one on the Roe; as to those, which lie higher than the liberties of Derry, on the Foyle river, they are not to be noticed in a report of this county. It is probable, that the original right to those fisheries was vested in the ancient monasteries, within whose precincts they lay, because, on the suppression of those monasteries, the then bishop of Derry laid claim to them, as successor to the ecclesiastical territories and rights.

In the instructions to commissioners, for the Ulster plantation, it was a direction, that the fishings in loughs and rivers are to be allotted to the proportions next adjoining; thence arose an opposition of claims between the London company and the Bishop of Derry. It appears, that not long since the privilege of fishing in the Bann, on the first Monday after Midsummer, which privilege had belonged to the convent of Coleraine, was actually exercised by a former bishop of Derry. The day of exercising this right was, therefore, called Bishop's Monday, and a very old man, named Andrew Irwin, remembers the exercise of this privilege; he also declares, that he was fishing at Black-point, near the Crannagh, on the day of the battle of the Boyne; and that during the whole war the fisheries were unmolested.

unmolested. About eighty years ago, the claims of the bishop were bought off for an annuity, which was to be paid by the London company, to whom, thenceforth, the entire dominion over the fishery was confirmed.

Beside the fishery of the Crannagh, there is another on the same river, called the Cuts, where the Bann falls over the rocks, the descent being 12 feet, and extremely rapid; a species of railing, called a weir, is erected on this rapid, for the purpose of interrupting the salmon, and catching them in their ascent.

Respecting this obstruction, a tedious suit has subsisted between the London society and the Donegal family, in which, to the great expense of each party, three verdicts have already been given; the first went in favour of Lord Donegal, which was set aside, and two successive verdicts, for damages and costs, were gained by the society; nevertheless, the suit is removed to chancery, where it is now, on the title for abating the Cuts.

In order to understand this interesting case, we must recur to the historical transactions of this county.

In the time of James the First, the Lord Deputy Chichester obtained a grant of the fisheries on the Bann; afterwards government purchased back this grant, in favour of the London society; and to insure

sure it to them, caused Chichester to levy a fine, and suffer a recovery. When Charles the First set aside the corporation of London, the title of the Londoners became void. In the time of the Commonwealth, Cromwell granted to one of the Skeffington family the right of the eel fishery of the Bann, in lieu of a certain pension, which this family claimed from the government. After the Restoration, the Londoners agreed to take out a new charter; but Chichester had the precaution, three months before this event, to obtain from the crown a grant, not only of his former possession, but also of the fishing from Lough Neagh to the Rock, that is to say, the Cuts. In this transaction, the lease made by Cromwell to Skeffington was handed over to Chichester. It appears, however, that Skeffington remained quietly in possession of the fishery for many years, till, having ousted a tenant, who understood the history of this transaction, this person apprised the Donegal family, who, thenceforth, took the occupation from the Skeffingtons into their own hands, and then placed their own immediate tenants into possession.

If the cuts were abated, it is known the fish would all go up to Lough Neagh; to prevent which, the cuts are erected at spaces of 27 feet, 15 feet, and leaving 40 open; it is only when there is a strong fresh in the river, that the fish can leap up the rocks.

It

It seems, that between these litigants there is a common interest, and there should, therefore, be a mutual courtesy, which might lead to an amicable adjustment; for, if the salmon fishers acted perversely, they might destroy the young eels in their passage through the cuts. The eel fishers could also greatly damage the salmon fry, when these are making their way towards the sea.

The eels come up from the sea in the beginning of May; they fatten in Lough Neagh and the upper rivers; in September they return, in order to breed in the sea. During these four months, they are advanced from the size of a small pack thread to the thickness of a man's wrist, and, in some instances, to that of a leg.

The full grown salmon go up the river to breed in March. The young salmon, or grawls, follow for the same purpose in June; in November and December, they *rood* in the fords or shallows. The ova, or pea, continue in the sand or gravel for three months. About March, the fry shoal downward to the sea; at this time they are not larger than a small finger, yet, in the June following, when they are taken at their return from the sea, some have increased to the weight of 19 pounds; the very least weigh two pounds. Thus it seems, that these two species of fishes are nearly running counter to each other, in their courses and propensities.

It has been observed of the salmon, that there are more females than males; it is said, that the fish always tend to their native river: if a long small fish is taken at the Crannagh, the fishermen call it a Foyle salmon; one of a plump shape, brownish colour, well flaked, with dark spots, is, by them, called a true Bann fish.

As to the season, about April, the first of the fish, making their appearance in fine weather, return again, playing in the ebb; yet, as the waters do not usually swell high enough for the fish to pass through the cuts, and as no fish can escape till the cuts are passable, it is thought prudent not to go to the expence of fishing, until the month of May. The size of a full grown salmon varies from six to 50 lb.; few exceed 30 lb. The best size is, from 16 to 20lb.; grawls are reckoned one penny a pound inferior to salmon. I have heard, that 140 fishes were once caught in two draughts, which weighed 6 tons.

At the Crannagh, two sets of fishers are employed, night and day, during the season; they amount to about 58 men; with clerks, overseers &c. about 70 persons are engaged. In the time of Lady Hamilton's management, considerable expense was incurred, by employing water-keepers to watch the nightly depredators, who, with lights, which allured the fish, and, by means of nets and gaffs, contrived to

kill

kill vast numbers of salmon, even at the time of roodding.

The rent paid to the society, as I learn, is somewhat above £.900 per annum; the expence of management used to vary from £.1000 to £.1500. As to the quantities taken, I understand, that in one year 250 tons of salted fish were taken, besides what were sold fresh; the least take of any known year is 45 tons. As to price, in 1757, salmon sold at 1*d.* per lb.; for many years after, the price continued at 1½*d.*; about 12 years ago, it rose to 3*d.*, and since that to 3½*d.* Sir George Hill, being now the proprietor of this fishery, has established a communication with the Liverpool markets, by means of fast sailing smacks; owing to this vent, as well as to the enhanced price of all sorts of provisions in the year 1800, the price was raised to 5*d.* per lb.; but in the winter following, the salted fish fell to 3½*d.* and 4*d.* per lb. In the beginning of this season, salmon sold from 5*d.* to 4½*d.* generally; it is now 4*d.*, July 1802.

The salmon of the Bann have but one season, and must go sometimes 30 or 40 miles to find a convenient place for spawning; those of Ramelton ascend but six or seven miles, and are taken in tolerable good condition the whole year round. I shall subjoin a quotation from the Natural History of Ireland: "If the fisheries were interrupted, for a year

or

two, by certain intervals, they would return to their first fruitfulness. This appears by the interruption given to the fisheries in the county of Londonderry during the war, which made them very valuable for many years after. And the fish would not only multiply, but also greatly increase in their bulk. After the long intermission by the war, in 1641, salmon have been taken in brooks, some six feet long, and in great quantities, where there has been none at all for some years last past."

Lampreys.

The principal place for taking these is at the Cuts, to the rocks of which they attach themselves by the means of suction. At low water they are discovered and caught with sharp iron hooks, fastened to a piece of wood, which are called loopers. These are a perquisite to the fishers, by whom they are sold for 10*d.* to 12*d* each; formerly they were much cheaper. They are reckoned a delicacy, when fresh, and are potted to be sent to other countries.

A catalogue of the fishes, frequenting the coasts of Londonderry, is subjoined.

FISHES OF THE CO. OF L. DERRY.

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Amphibia,	Nantes,	Petromyzon,	marinus, lamprey;	already mentioned as common; attached to the rocks of the Salmon leap, near Coleraine.
		Rasa,	batis, skate;	very common on the coast; generally eaten cold with vinegar; the fins only used; the liver makes oil. — Quære? Would not the remainder make good isinglass?—I have heard from fishermen of another species, but not having seen it, I do not note it here: it is called in Irish *calliogh.*
		Squalus,	acanthias, dog-fish;	the flesh not eaten; the entrails yield oil; it is called by the Irish *gubboch;* the skin used by cabinet-makers. It is, perhaps, the most long-lived of all fish out of water.
			mustelus, smooth hound-fish;	five or six rows of teeth; darker on the back and wider in the nostrils than the former; sometimes eaten.
		Lophius,	piscatorius, sea-monster;	I saw one at Culmore; another near the Bann.

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Amphibia,	Nantes,	Accipenser,	sturio, sturgeon;	taken in salmon nets in the Foyle river, near Lifford, and elsewhere; I saw one, that was seven feet long; the flesh eats like veal.
		Tetrodon,	mola, sunfish;	one of these is depicted as a curiosity, taken shortly after the date of the siege of Derry, on a map of that day; another was taken at Culmore about ten years ago, and a third this summer, 1802, near the mouth of the Bann; it resembles the amputated head of a fish.
Pisces,	Apodes,	Muræna,	anguilla, eel;	this well-known fish is common in all our rivers. The eel fishery of the Bann is very remarkable; the eels are intercepted in their return towards the sea, in nets called *coghils*, fixed across the river. The value of this fishery will best appear from the rent: about five years ago it was let to the present lessee for £410 per annum, he paying a fine of £1300, by the late Marquis of Donegal. The season for fishing is from the beginning of August to the end of September.

Pisces,

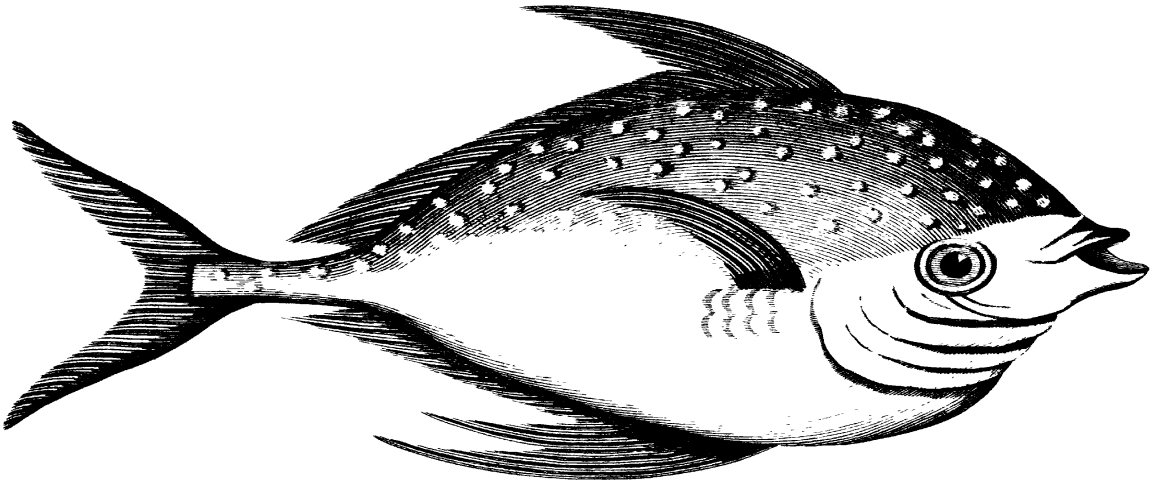
Class. Order.	*Genus.*	*Species.*	*Observations.*
Pisces, Apodes,	Muræna,	conger, conger-eel;	the fishermen think, that the young eels, of the above species, change at last into this; which is a mistake.
	Amodytes,	tobianus, sand-eel;	in the sands between the Bann and Down-hill, within tide-mark.
	Gadus,	æglesinus, haddock;	of these there is a plentiful supply, both from the coast of Derry, and Innishowen; the price varies from 6*d.* to 1*s.* 1*d.*
		morhua, cod;	extremely common; salted by the gentry and country people about Christmas, as part of their winter store, at 5*s.* or 6*s.* per dozen: the poor, who want butter, prefer herrings, as more abundant in oil.
		merlangus, whiting;	not so plentiful.
		pollachius, whiting-pollack;	not scarce.

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Pisces,	Apodes,	Gadus,	merluccius, hake;	common; weight about 9*lbs.* length about two feet.
			molva, ling;	common; not used till salted.
			mustela, rock-ling;	called rock-cod; it is of a reddish yellow in colour, and is always in season.
			lythe;	this fish is watery; it grows to the weight of 14*lbs.* I have not yet ascertained its true name.
			grey-lord;	of this fish, which also is often 14*lbs.* weight, I have not yet ascertained the true name.
	Thoracici,	Gobius,	scorpius, father-lasher;	not common.
			gobio, miller's thumb;	rather more abundant.
		Zeus,	faber, doree;	not common.
			opah, king-fish;	the only fish of this species, which has been known to be taken on the Irish coasts, was found on the flat shore

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Pisces,	Thoracici,	Zeus,	opah, king-fish;	of Magilligan alive, probably pursued till grounded. Through the indulgence of the Dublin Society, the reader has an engraving of this beautiful fish; the original is deposited in the Society's rooms; but I am sorry to say, it was too long out of water, before it reached me, to be well preserved. Only five others of this species are recorded to have been seen on the British coasts. It is a native of the coast of Africa. The fish here engraved weighed about 14*lbs.*; one of this species is said to have weighed 140*lbs.*
		Pleuronectes,	hippoglossus, holibut;	not very common.
			platessa, plaise;	taken along all our shores.
			flessus, flounder;	common along the flat shores; particularly delicious near the Bann.
			solea, soal;	more frequent on the Innishowen, than on the Derry coast.

Pisces,

Opah or King Fish. 2 Feet long. 10 In. broad.



Fins Scarlet. Upper part of Body Green. Belly Silver. Spots Blueish White

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Pisces,	Thoracici,	Pleuronectes,	maximus, turbot;	no place is better supplied than L. Derry with this fish; I have bought a large one for 2*s.* 8½*d.*
		Sparus,	pagrus, sea-bream;	a beautiful fish; not bad on the table. It is called in Irish *merron roe.*
		Labrus,	tinca, old-wife;	not common.
		Perca,	fluviatilis, pearch;	abounding in Lough-neagh. The following anecdote I have from an accomplished gentleman, whom I have the honour to name among my best friends, I mean the Rev. Mr. Hume, Dean of Derry. The late Lord O'Neil mentioned to the Dean, then on visit at Shane's-castle, that his Lordship's father had been the first, who put the pearch into this lough. How extraordinary the encrease, in a period, not, perhaps, exceeding forty years!

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Pisces,	Thoracici,	Gasterosteus,	aculeata, stickleback;	well known; in streams.
		Scomber,	scomber, mackarel;	at some seasons not scarce.
		Trigla,	gurnardus, grey gurnard;	common enough; worthless.
			cuculus, red gurnard;	a much better fish.
	Abdominales,	Salmo,	salar, salmon;	in addition to what has been said as to this fish, I have to remark, that the salmon frequents our smaller rivers, such as the Roe, on which there is an occasional fishery, claimed by Mr. Conolly, as of the manor of Newtown Limavady. These fish ascend our shallow streams, for the purpose of rooding; on the return, the fry

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Pisces.	Abdominales,	Salmo,	salar, salmon;	fry are killed in great numbers, in passing through the water-leads, by the mill-wheels of the bleach-greens, which are becoming daily more common; this happens mostly in dry seasons, when all the water is turned to the machineries. It is said, that one or two mother fish remain in the rivers, to direct the fry to the sea. Many a salmon is killed in the small rivers, by means of night-lights and gaffs, at very improper seasons.
			lacustris, lake-trout;	in Lough Neagh plentiful; the flesh very red; the weight sometimes 50*lbs.*
			alba, white-trout;	taken in small rivers in nets; a fine fish; common; seldom weighs more than 3*lbs.*
			salaris, salmon-trout;	taken in salmon nets, in great plenty; a good fish for the table; sometimes 12*lbs.* weight.

Pisces,

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Pisces,	Abdominales,	Salmo,	fario, spotted trout;	in rivulets; spotted with red.
			samlet, or jenkin;	the least of this genus; well known.
			dollaghan;	I am not certain whether this is the lacustris of Gesner. It is not so white as the former trouts in the scales; its flesh is red; its appearance is, I believe, about August; it weighs from 3*lbs.* to 5*lbs.*; it will live in wells or ponds for several years, encreasing, in favourable places, to a much larger size. Whether we have the Alpinus, or *red char-trout*, or *buddagh*, is, to me, not quite certain at present: I am inclined to the affirmative, but do not assert it.
		Esox,	lucius, pike;	not very unfrequent in some rivers.
			belone, horn-fish;	I have seen it on muddy flats.

Class.	*Order.*	*Genus.*	*Species.*	*Observations.*
Pisces,	Abdominales,	Esox,	saurus, skipper;	it resembles an eel, with an horned nose; it sometimes shoals itself on muddy shores.
		Mugil,	cephalus, mullet;	taken chiefly at Culmore bay.
		Clupea,	harengus, herring;	well known; seldom in great shoals close to our coast; often known to pass westward by the pursuit of the porpoise: It is taken sometimes at Port-rush.

There is a fish, called *rock-herring*, of which the fishermen speak; it is taken singly, not in shoals. I suspect they mean the alosa, or shad; but not being sure as yet, I shall not insert it.

Many other fishes, no doubt, have escaped me; perhaps I shall have it in my power to make this catalogue fuller at a future day.

I have just procured a skuttle-fish, to be preserved for the Dublin Society.

Among

Among the mammalia, we have the phoca vitulina, or seal. Several of the cete, or whales, have been thrown on our coast. The delphinus phocæna, or porpoise, is often seen wallowing after the herring shoals. The orca, or grampus, has been a visiter, and is sometimes entangled, by venturing too near.

As to testaceous fish, it may be sufficient to mention, that our coast furnishes a good supply of lobsters, crabs, &c. Oysters abound on the coast of Myroe; these are superior to those from the shores near the island of Inch.

Respecting the *lepus antafera*, commonly called *barnacle's egg*, which is a bivalve adhering to seawrack, there is a curious opinion, which I have heard, but do not affirm; it is, that some extremely devout Roman Catholics are so persuaded, that the barnacle is the product of this shell-fish, as to think, the bird itself may be occasionally ranked with fishes; in fact, there is a very odd resemblance to the feathers and feet of an embryo bird, in those parts of the fish, which appear without the shells. We have, according to the information of my friend, the Rev. Mr. Haughton, a species of pearl muscle, found in the river Claudy, between Kilrea and Ballyscullion. I suppose this to be the *mya margaritifera*.

SECT. 10. *State of Education, Schools, and charitable Institutions.*

THE diocesan school-house of Derry was erected in the time of James I.; the endowment consists of a salary from the London incorporation, and a subscription from the bishop and clergy.

Over this institution my learned and amiable friend, the Rev. James Knox, presides with great diligence and ability.

The learned and modern languages, with other branches of education, necessary for the mercantile pursuits, are taught in this seminary.

Besides this, at Coleraine there is a good mercantile school, endowed by the London incorporation, with a suitable house; a very ingenious person, Mr. Adams, is the master.

There is a charter-school at Ballykelly, where boys are fed, clothed, and instructed in reading English, writing, and arithmetic. This institution admits only boys; of these there are 50, when the number is complete; by the return of 1801, 29th September, there were then 47. Each boy is entitled to a portion on his marriage, if it be according to the rules of the school.

There

There are other good private schools in Londonderry; every parish has one or two; and the disposition of parents to give their children education is continually on the encrease.

SECT. 11.—*Absentee and resident Proprietors.*

THIS county is rather unfavourably circumstanced. Several of the principal proprietors are absentees. Were it not for the gentlemen of the linen business, and some others, whose names occur as residents, under the title of *Gentlemen's seats*, there would be little occasion for the following query.

SECT. 12.—*Circulation of Money or Paper?*

EXCEPT in the city of Londonderry, we have scarce any paper; this is caused by the dislike, which the weavers shew to any substitute for gold. The linen merchant is obliged to purchase guineas at any rate; thence it happens, that a large proportion of the gold, circulating in the kingdom, is in the northern counties.

SECT. 13.—*Farming Societies.*

THERE are none.

SECT. 14.—*Manufactures.*

THE staple of this county is the linen manufacture. In detailing such information as I have been able to procure, it is hoped, that no uninteresting topics will be offered to the reader.

Flax-seed.

This is imported, chiefly from New-York, Boston, and Philadephia; all this goes under the character of American seed; a preference is given to that, which grows in the most northern climates. I understand, that a cargo from South Carolina arrived at Derry this season, 1802. A much greater preference is given to the seed imported from Riga and Holland. The Dutch is in most esteem.

The American seed varies in price, from 15*s.* to 20*s.*; the Dutch and Riga, from 20*s.* to 26*s.* per bushel. This variety of price depends on the gene-

ral

-al quantity imported and exported; upon the local quantity at certain ports; upon the quantity of old seed on hand. Other circumstances influence in a less degree, such as the actual briskness of the sales of yarn and linen; the favourableness of the season, the plentifulness of provisions; and, not least of all, the management of speculators in this, which may be reckoned rather a lottery, than a regular branch of commerce.

Dutch seed produces a crop, exempt from that disease, called *ticking* or *firing*. This is chiefly in the Philadelphia, and southern seeds; it is like a small iron mold on the stem of the plant, and happens mostly in seasons of great rain, when the flax is thick sown, and advancing towards ripeness.

Several farmers are, of late, in the habit of rearing seed for themselves and for sale. Experience has proved, that seed raised from the Dutch, upon *good clay* ground, is equal, in every respect, to the best imported; nor is it found necessary to recruit this home-raised seed, by having recourse, as was till lately practised, every second year to the Dutch. The same attention, which is paid to changing the soils of other seeds, is sufficient for this. I have examined seed in hand, and have seen the crop from it now growing, which has been five years *run*, that is, sown without change of foreign seed; and, I think, it merits a higher price than any, which I saw this year,

year, 1802. The truth is, that the country retailers did purchase a good deal of the home-raised seed, which they mixed with the old Dutch, and sold new; and lucky it was for the country, to which it was sold, as the cargoes, which had been many years condemned in Scotland, found their way through the port of Derry into our country, to the great detriment of the persons who sowed. For, although this season is remarkably favourable for flax, yet the old Dutch seed, of which I am making mention, scarcely promises a half-crop. Warned of its bad quality, I ordered nearly a double quantity to be tried, and have, after all, not near so full a product as from the American seed, which I had lying over in my own house from the former year. Others have made the same complaint; and some, I hear, ploughed down the first scanty crop, and sowed other seed again.

When the flax intended for seed is ripe, (or, as it is called, black in the bows) it is pulled, and tied in sheaflets, or *half-straps*. After having stood in this state till thoroughly winnowed, it is stacked with the bows or seed turned inwards. Some thresh it after harvest, lay by the seed, and steep the flax. Others thresh it before the next seed-time, and steep the flax at their leisure, generally about June, as a *slack* time, and because, the warmer the season, the less time is requisite for watering and spreading. The

flax,

flax at this season, is not only more easily, but also more successfully managed.

The seed, threshed in winter, receives a greenish black colour from lying in heaps; the spring-threshed is of a reddish brown. The former is exactly of the colour of the Dutch, and can therefore be passed on the most knowing buyer as such: the latter resembles the American in colour. It is not improbable, that these foreign seeds derive their different hues from similar causes. For the other uses, to which flax-seed is, or may be applied, see Appendix, No. 3.

The flax itself is much the coarser, if left for the ripening of the seed; on the other hand, half the quantity of seed is enough, and the weight of the crop, equal to that of the *lint*, pulled early for manufacturing. The seed-flax, well managed, will spin to the fineness of 11 hundred, which would sell at about 20*d.* per lb. In short, from the best enquiry I could make I learned, that the value of the flax, kept for seed, is about half that of the *lint*, under the usual management. It is very useful in making coarse linens for household purposes.

I shall not take up time, by dwelling on the well-known processes of steeping, spreading, &c.; but the reader will, perhaps, pardon the introduction of a matter of fact, not, perhaps, so generally known.

On

On the sea-coast of Myroe, on account of the scarcity of fresh-water, pits are dug within the reach of the full tide, and it is in these, entirely in salt-water, that the flax is steeped. I found on enquiry, that, if this flax be either well washed in running water, or exposed to a good deal of rain on the spread-field, it is equal, if not superior, in strength and whiteness to any steeped in fresh water. Perhaps, this hint may lead to something useful, as to the bleaching property of the sea-water, which contains a considerable quantity of muriate of soda, *i. e.* kelp, united with marine acid.

Seeding.

Fourteen pecks of American seed, is enough for an Irish acre; a little more Dutch seed may be given, if the crop is desired to be fine; for rearing seed, seven or eight pecks.

Yield.

For every peck sown, the yield should be, if in good clay, about eight beets, each beet containing 20 lb. of rough flax, ready for the mill; these 20 lb. are reduced, in the mill, to about 5 lb.; but, if scutched, (that is, managed by women, with an instrument for striking off the useless parts of the flax) there

there will remain about 6 lb.; 5 lb. of milled flax yield 2½ lb. of hackled *lint;* the remaining 2½ lb. is the tow, which is spun for various uses. 1 lb. of good flax sells from 16*d.* to 19½*d.*: the tow of the same, from 3*d.* to 6*d.*, (1802); at the mill, the price is about 1*d.* per lb., or 19½*d.* for 20 lb.

Milled flax is next handled by the flax-dresser (provincially tow-tickler): by drawing the flax through his hackle, the tow is separated from the *lint.* The flax, before hackling, is sold near Newtown, at from 9*d.* to 10*d.* per lb; after dressing, the *lint* sells at from 15*d.* to 20*d.*

In Derry, the retailers of flax have the bunches for sale greatly intermixed with the harsh pith of the plant, called provincially *shows.* This is brought, chiefly from the neighbourhood of Manor-cunningham, and other fertile parts of the county of Donegal; it is not the growth of our county, but supplies a considerable part of manufacture. It is sold at from 4*d.* to 8*d.* per lb., and is bought by the inhabitants, even of the parts of the county most remote from the city of Londonderry.

The flax is spun, in general, from 3 hanks to 4 hanks, or, as it is called, spangle yarn; this being the fittest for the fabric of our markets; yet the same flax, in many places, might be drawn to 7 or 8 hanks, if such yarn were in demand, which is not the case, except for thread for some uses.

Yarn,

Yarn, of 4 hanks to the pound, is sold in Derry, at, from 2*s.* 9*d.* to 3*s.* 6*d.* The 4 hank yarn is used for the weft; the warp is of 3 hank yarn, which sells at, from 4*s.* to 4*s.* 4*d.*

The quantity necessary for making a web 52 yards long, and 3-4ths of a yard wide, is 9½ hanks of spangle yarn for the weft; 9 hanks of 3 hank yarn for the warp. The weaving would cost about one guinea. If well made, and of a good colour, such a web would bring, at the market, from 2*s.* 2*d.* to 2*s.* 4*d.* per yard.

In general, through the county of Antrim, the flax is spun into much finer yarn than in our county.

Sacking is made of tow-yarn, for farmers and others. It is a curious illustration of the advancement of the price of this manufacture, that a piece, which might have been purchased at 7*d.* or 8*d.* about ten years ago, would now cost 13*d.* or 14*d.*

Yarn is brought into Londonderry market from Innishowen, and several of the mountain districts of this county; all bought in Londonderry is not woven in the county. A quantity is exported to Liverpool for Manchester.

The coarsest yarn is carried to Derry, the finest to Coleraine, Newtown, &c. The fabric of Coleraine is the finest. All of this fabric, though made and sold in other places, goes under the name of *Colerains*.

The fabric of Londonderry is of two characters;

1st, Narrow, or 27 inches wide, called wrappers, and made of tow-yarn, selling at, from 8*d.* to 1*s.* per yard.

2d, Wide; in breadth, 32 inches, which is made of *lint* yarn, and sells at, from 1*s.* 4*d.* to 2*s.* 10*d.* per yard.

Brown, or unbleached linens, are exported in considerable quantity by the merchants; the coarse are chiefly sent to Liverpool; the fine are disposed of in various manners.

The white linens, are either sent to Dublin on cars, to be sold at the three annual markets of that city, or else, they are shipped in regular traders to Liverpool from Derry, or to London direct, usually consigned to factors; lately, orders have been sent from London to the bleachers themselves, by which they are saved the expence of factorage, and, consequently, can sell their linens the cheaper.

A certain proportion of linen is sold for home use, which is not inferior to the rest, either in material or management.

The prices of brown linen fluctuate, according to the briskness of the sales of the white, and the orders sent to the merchants.

In Derry market, the 3-4ths wide linen is sold at, from 10*d.* to 11½*d.* for the last three years, before which they were lower.

In

In Coleraine, the 7-8ths are sold at, from 1*s.* 8*d.* to 4*s.* 10*d.*; the medium, about 2*s.* 4*d.*

As to the quantity brought into market, this varies greatly with the season. In February and March, the wheel and the loom are busy; in seed-time, the weaver is employed in the character of a husbandman; again, in August, September, and the beginning of October, the work is resumed with full alacrity. The poor man's harvest does not commence till near the middle of October. In very hot weather, as well as in frost, the weaver cannot get his yarn to stand the dressing on the loom; of course, there are two additional seasons, besides those of ploughing and reaping, in which the manufacturer must find employment in his external or internal economy.

The Materials for bleaching.

I understand the articles, used in the process of bleaching in this county, are, 1st, Kelp. 2d, Cassub. 3d, Barilla. 4th, Pot-ash. 5th, Pearl-ash. Some years ago, kelp, cassub, and barilla were much employed. Latterly, pot-ash and pearl-ash have come into general use. And I am informed by an eminent bleacher, who first used pot-ash, (anno 1786,) and who at present uses no other

alkali, that he considers it as the most efficacious and economic material.

Bleaching with the oxygenated muriatic acid, according to the process of the French chymists, was tried in 1791 by the gentlemen, alluded to above; but the expedition of the process did not compensate the expense. The oxymuriate of *lime*, according to the process of Messrs. Tenant, has been tried in the county, but, as I understand, has not been found to answer.

I shall conclude what I have to report on this subject, by mentioning some not incurious topics of comparison between the present and the former processes of bleaching.

Not more than fifty years ago, the bleach-green was a flat, on the lowest ground, intersected by trenches, filled with water; this water was occasionally thrown, by scoups of wood, upon the linen, stretched for the purpose contiguous to the trench; the souring was done with butter-milk; the beetling performed by hand; the marking by taylors; and the linen, when ready for market, was carried on back loads.

In the year 1784, the price of bleaching was, per piece of 26 yards, 3*s*. 9½*d*.—It is now (1802) 6*s*. 6*d*.

About thirty years ago, there was not one bleach-green on the Fahan river; now, (1802), there are seven.

seven. Other situations will, it is supposed, be occupied at no very distant period.

About fifty years ago, the first bleach-green was erected on the Gortin river; in 1800, there were, as I was informed, five occupied, and sites for three more bespoke.

I select these two instances, as illustrations of the progress of this manufacture in the county of Londonderry, within half a century.

As to the quantity of linen, now bleached within this county, an estimate, though an inaccurate one, may be formed, by supposing, that every registered bleacher in the county finishes, on an average, 5000 pieces annually. According to the list, transmitted to me from the Linen board, I find the number of bleachers to be 58; to this should be added the names of two others, recently erected, but not yet, it seems, entered on the list. It should also be considered, that some names, now standing on the list, may belong to bleachers, who have either died, or otherwise discontinued. Taking, however, the actual number at 50, it will follow, that the number of pieces, bleached in the county of Londonderry, may amount to 250,000; estimating the value of each piece at £2. 5s. 0*d*., the actual value of the linen, bleached in this county, may be thus computed at £.562,500 sterling.

For

For the satisfaction of the reader, I subjoin documents, with which I was favoured, in the most obliging manner, by James Corry, Esq; secretary to the Linen board.

Extract of a Letter from James Corry, Esq.

" The inclosed account has been made out, on which I can safely rely. The average number of pieces, and the average value, I have taken every pains to ascertain from personal enquiries from the most respectable factors.

" At the same time, that I submit the inclosed to you as a correct statement, permit me to apprize you, that it is subject to this exception, that all linens included in it cannot be said to be the manufacture of your county, as much of it may have been purchased in neighbouring markets, brought into your county brown, and bleached there, and transmitted here white, with the seal of the Derry bleacher on it, as if it were the manufacture of that county; but the observation is of less importance, if we consider, that neighbouring counties do, in the same manner, become possessed of Derry linens, which are, in turn, sent up from those counties with the bleachers' seals, as if they were manufactured there.

" I could give you an account of the flax ground, which claimed bounty from the Board in any given periods,

periods, if you would deem that of any value; and would be glad to communicate with you more fully; for I shall take great pleasure in affording you every possible information.

"I am, Sir,

"With great respect,

"Your most humble servant,

"*James Corry*"

"*Rev. G. V. Sampson,*

"*&c. &c. &c.*"

List of registered Bleachers in the Co. of L. Derry.

Years.	*No.*	*Names.*	*Bleach-green.*	*Place of Abode.*
1782.	1.	A. Ogilby,	N. Limavady,	N. Limavady.
	2.	L. Ogilby,	ditto,	ditto.
	3.	L. Alexander,	ditto,	ditto.
	4.	J. & J. Alexander,	ditto,	ditto.
	5.	J. Ogilby,	ditto,	ditto.
	6.	R. Campbell,	ditto,	ditto.
	7.	J. Boyle,	Drumcovit,	Drumcovit.
	8.	J. Andrews,	Comber,	Comber.
	9.	H. Boyle,	Drumcovit,	Drumcovit.
	10.	J. Stevenson,	Knockan,	Knockan.
	11.	J. Henderson,	Dungiven,	Dungiven.
	12.	G. Ramsey,	Moneymore,	Moneymore.
	13.	R. Magill,		

Years.	*No.*	*Names.*	*Bleach-green.*	*Place of Abode.*
1782.	13.	R. Magill,	Anahavill,	Anahavill.
	14.	W. Magill,	Moneyhaw,	Moneyhaw.
	15.	J. Magill,	Lissen,	Lissen.
	16.	A. Reynolds,	Lismony,	Lismony.
	17.	J. Machonchy,	Artrea,	Artrea.
	18.	J. Wier,	C. Dawson,	C. Dawson.
	19.	R. Campbell,	N. Limavady,	N. Limavady.
	20.	W. Ross,	ditto,	ditto.
	21.	W. Moody,	ditto,	ditto.
	22.	J. Moody,	ditto,	ditto.
	23.	J. Orr,	Gortan,	Gortan.
	24.	A. Orr,	Englishtown,	ditto.
	25.	L. Alexander,	Dogleap,	N. Limavady.
	26.	J. Ogilby,	Ardnargle,	Ardnargle.
	27.	H. Thompson,	Ardhill,	Ardhill.
	28.	J. Maurrell,	N. Limavady,	N. Limavady.
	29.	D. Ross,	Beaufort-lodge,	Beaufort-lodge,
	30.	W. Orr,	Gortan,	Gortan.
	31.	J. Molyneux,	Keely,	Keely.
	32.	J. Orr,	Ballybrittain,	Ballybrittain.
	33.	J. Stephenson,	Mauritstown,	Fortwilliam.

34.

Years.	*No.*	*Names.*	*Bleach-green.*	*Place of Abode.*
1782.	34.	R. Giveen, jun.	———,	Coleraine.
	35.	J. & M. Ross,	Comber,	Comber.
	36.	J. Clarke,	Maghera,	Maghera.
	37.	A. Browne,	Aghadowey,	Aghadowey.
	38.	R. Alexander,	Ballyarton,	Broomhall.
	39.	W. Bond,	ditto,	L. Derry.
	40.	S. Crawford,	C. Dawson,	C. Dawson.
	41.	J. M'Kenny,	Monygran,	Monygran.
	42.	J. Chambers,	Culterammer,	Culterammer.
	43.	J. Crawford,	C. Dawson,	Magherafelt.
	44.	W. Forester,	Greenfield,	Greenfield.
	45.	K. Henderson,	C. Dawson,	C. Dawson.
	46.	D. Weir,	ditto,	ditto.
	47.	J. Weir,	ditto,	diito.
	48.	H. Crawford,	Broagh,	ditto.
	49.	W. Gregg,	Coleraine,	Coleraine.
1783.	50.	F. Burnett,	Mausky,	ditto.
	51.	C. O'Neil,	Templemore,	L. Derry.
1784.	52.	J. Chambers,	Knockan,	ditto.
1785.	53.	J. Acheson,	Oaks,	Oaks.
1792.	54.	W. Stevenson,	Knockan,	Knockan.

55. J. Henderson,

Years.	*No.*	*Names.*	*Bleach-green.*	*Place of Abode.*
1800.	55.	J. Henderson,	C. Dawson,	Magherafelt.
1801.	56.	W. Clarke,	Maghera,	Maghera.
	57.	H. Murrell,	Meargreen,	Batteagh.
1802.	58.	S. Wright,	Grouse-lodge,	Lissane.
	59.	J. A. Smith, & Co.	———,	Lower Cumber.

An Account of the Number and average Value of Packs and Boxes of Linens, which have come into the Linen-hall of Dublin, from the County of L. Derry, in the following Years.

Years.	Packs.	Boxes.	Total Number of Pieces in Packs, supposing 60 Pieces to each Pack.	Total Number of Pieces in Boxes, supposing 60 Pieces in each Box.	Total Number of Pieces in Packs and Boxes.	Total Value of Pieces in Packs and Boxes, taking coarse and fine all round, at an Average of 2l. 5s. 6d per Piece.
						£. s. d.
1792, - -	1577	689	94,620	41,340	135,960	309,300 — —
1793, - -	1285	540	77,100	32,400	109,500	249,112 10 —
1794, - -	1439	527	86,340	31,620	117,960	268,359 — —
1795, - -	1389	588	83,340	35,280	118,620	267,193 16 8
1796, - -	1154	584	69,240	35,040	104,280	237,237 — —
1797, - -	694	493	41,640	29,580	71,220	162,025 10 —
1798, - -	743	1014	44,580	37,140	81,720	185,913 — —
1799, - -	695	619	41,940	60,840	102,780	233,824 10 —
1800, - -	503	987	30,180	59,220	89,400	203,385 — —
1801, - -	433	1104	27,180	66,240	93,420	212,530 10 —
	9956	7145	596,160	428,700	1,024,860	2,328,880 16 8
Average a[illegible]	993 6/10	714 1/10	59,616	42,870	102,486	232,888 1 6

Linen Office, 26th March, 1802, JAMES CORRY, *Sec.*

A List

A List of brown Seal-masters in the Co. L. Derry.

No.	*Persons recommended.*	*County.*	*Parish.*
1.	Denis Bradly.	L. Derry,	L. Derry.
2.	Philip Shields,	ditto,	Newtown Ards.
3.	James Corry,	ditto,	ditto.
4.	Wm. Rabb,	ditto,	L. Derry.
5.	John Murphy,	ditto,	ditto.
6.	Robt. Abernathy,	ditto,	ditto.

An Account of the Sums paid by the Trustees of the Linen and Hempen Manufactures of Ireland, in the following Years, by Way of Bounty, to encourage the Cultivation of Flax in the County of L. Derry, and the Quantities of Flax Lands, in the said County, which, in the said Years, received the said Bounty.

Years.	*A.*	*R.*	*Bounty.* £.	*s.*	*d.*
1786,	676	1	740	8	0
1787,	1943	—	1090	5	2
1788,	1396	—	716	16	4
1789,	1810	—	1015	6	4
1790,	1384	2	631	16	11
1791,	1399	1	459	6	10
1792,	1507	—	465	4	6
1793,	1391	3	556	14	8
1794,	1156	1	469	17	5
1795,	1140	1	495	18	3
1796,	2204	1	5014	13	4
	16,008	2	11,656	7	9

JAMES CORRY,

Sec. to Trustees.

Trade

Trade and Shipping of L. Derry Port.

From the year 1750 to 1778, a considerable number of trading vessels were employed, belonging to this port. Between the years 1756 and 1768, one single house owned from 12 to 20 vessels. At the commencement of the American war, insurance becoming very high, on account of our relative situation to the maritime powers, and the colonial trade being, at the same time, much reduced, the shipping of L. Derry became proportionably diminished.

The interval, between this and the late French war, was too short to afford an opportunity for the recruit of our ships. During this war, the Americans, together with the Northern powers, being respected as neutral, became, almost exclusively, the carriers of all the trade of this port.

At present, there are scarcely any vessels, which, strictly speaking, belong to the merchants of L. Derry, except three, which, under the character of constant traders, are chiefly employed in carrying yarn, hides, butter, &c. to Liverpool, and which bring back woollens, cottons, earthen-ware, hard-ware, the manufactures of England, with sugars, rum, and other West India produce.

The

The trade to the North of Europe is carried on with the ports of Petersburg, Riga, and Archangel, belonging to Russia; with Dantzic, Elbing, Koningsberg, and Memel, belonging to Prussia; with Dronten, Christiansund, Christiana, and the ports near the Neze, belonging to Norway and Denmark; with Gottenburg and Stockholm, belonging to the Swedes. The articles imported are chiefly iron, hemp, flax, flaxseed, tallow, tar, and timber.

A considerable trade is also carried on with the northern states of America; flaxseed, tobacco, tar, white oak, plank, and staves, are among the articles of most general commerce. During the scarcity of the late years, Indian meal was imported to a large amount, and was of the greatest service; wheat may be imported under regulations; wheaten flour is also imported. In return, we export partly money, partly linens, 3-4ths wide, unbleached, and of a low price; we also export the most valuable of all products, the human race. In former years, I have heard this export rated at from four to five thousand annually, from the port of L. Derry; it is now subject to regulations, and, I think, on the decline. It is to an improved system of agriculture alone, that we can look for the preservation of this *plant*, which, under the auspices of the Dublin Society, may, one day, find a *better America* in their reclaimed *bogs* and *wastes*.

With

With the West Indies we may have a direct trade; but this is at present enjoyed rather in the permission, than in the fact. From the Clyde, white and barreled herrings are imported.

From Oporto, Lisbon, and St. Ubes, L. Derry receives a considerable quantity of wine, both directly, and through Dublin and Belfast.

There is also some trade carried on with Bristol and London. During the late war, a considerable share of the provision trade was carried on from the port of L. Derry, principally by one very respectable house, that of Mr. Horner.

By the navigation act, every nation is permitted to carry the goods considered to be of its own produce. The ships, belonging formerly to L. Derry, were chiefly of the build of those provinces in North America, over which his Britannic majesty retained the sovereignty; of these vessels, hardly one remains. During the war, some relaxation was permitted, from which it resulted that, though the Irish ship-owners might have been injured, the Irish trade was extended.

I subjoin a list of the imports and exports of L. Derry, taken at different periods, with the interval of ten years, extracted from the Account of imports and exports lodged in the rooms of the Dublin Society.

Imports

Imports of Londonderry, 1792.

From Africa.

Soap, - - -	5	cwt.

From Denmark and Norway.

Bark, - - -	195	barrels.
Oil, train, - -	3424	gallons.
Tar, - - -	120	barrels.
	hnd. q. no.	
Balk, - - -	5 1 28	
Deals, - - -	455 0 0	
Timber, - - -	34	tons.
Wooden ware,	£.3, 8*s.* 3*d.*	value.

From the East Country.

	cwt. q. lb.	
Pot-ashes, - -	10,306 2 15	
Starch, - - -	61 3 21	
	hnd. q. no.	
Balk wood, - -	23 — —	
Clap-boards, - -	5 2 10	
Deals, - -	0 3 18	

Timber, - - -	266	tons.
Wooden ware, - -	£41, 10s. —	value.

From England.

Apples, - - -	1	bushel.
Arms, - - -	£.61, 18s. 9d.	value.
Bark, - - -	5012	barrels.
Beer, - - -	1643	ditto.
	cwt. q. lb.	
Books, unbound, -	1 0 26	
Bullion, gold and silver, - -	$9\frac{7}{10}$	oz.
Glass bottles, - -	3340	dozen.
Bricks, - - -	2000	no.
	cwt. q. lb.	
Chalk, - - -	60 3 21	
Cards, wool, - -	467	doz.
	cwt. q. lb.	
Cheese, - - -	68 1 16	
Coaches and chaises	£40, — —	value.
Coals, - - -	2964	tons.
	cwt. q. lb.	
Copper-plates and bricks,	46 2 —	
	tons. hd. gal.	
Cider, - - -	11 3 6	
Beans and peas, -	$32\frac{1}{4}$	barrels.
Drapery, (new) -	15,373	yards.

Drapery,

Drapery, (old) -	13,104	yards.
Shag, - - -	14	ditto.
Drugs, - - -	£.16, 13s. 3d.	value.
Alum, - - -	159	cwt.
	cwt. q. lb.	
Copperas, - -	82 3 8	
Indigo, - - -	1511	lbs.
Logwood, - -	6	cwt.
Redwood, - -	6	cwt.
Shumack, - -	4	cwt.
Earthen ware,	£.587, 2s. 3½d.	value.
Dyeing stuffs,	£5, 18s. —	ditto.
Fans, - - -	30	no.
Furs, - - -	£.3, — —	value.
Flints, - - -	3½	mille.
Glass cases, - -	136	no.
Glass phials, - -	50	no.
Glass ware, - -	£.51, 14s. 10d.	value.
Gloves, - - -	24	pair.
Pepper, - - -	5361	lbs.
Pimento, - -	343	ditto.
	cwt. q. lb.	
Rice, - - -	32 0 12	
Succards, - -	20	
Sugar, loaf, - -	181 2 18	
Ditto, Muscovado, -	7143 3 17	
Small parcels, -	20 9 4	

	cwt. q. lb.	
Gun-powder, - -	36 1 10	
	doz. m.	
Needles, - -	7 7	
Thimbles, - -	5460	no.
	doz. m.	
Pins, - - -	1 3	
Small parcels, -	£.90, 4*s.* 1*d.*	value.
Hemp seed, - -	$\frac{4}{7}$	hd.
Hats, - - -	56	no.
	cwt. q. lb.	
Hops, - - -	95 1 24	
Hardware, -	£.876, 19*s.* 4*d.*	value.
	cwt. q. lb.	
Iron, - - -	335 2 26	
Knives, - - -	36,516	no.
Mermits, - -	1044	no.
Razors, - - -	144	no.
	gros. doz.	
Scissars, - -	28 $7\frac{1}{2}$	
Scythes, - -	18	doz.
Small parcels,	£.1223, 3*s.* 6*d.*	value.
Ivory, wrought, -	$24\frac{1}{2}$	lbs.
	cwt. q. lb.	
Red lead, - -	2 1 23	
Sheet lead, - -	59 — —	
Shot, - - -	151 — —	
White lead, - -	19 1 24	
Callico, stained, -	259	yards.

Canvas,

Canvas, - -	14,559½	yards.
Muslin, - -	526	ditto.
Linen, cotton, and silk manufacture, -	£.1504, 9s. 2d.	value.
Mats, - - -	6	no.
Millinery ware,	£.5, 13s. 9d.	value.
Linseed oil, - -	63	gallons.
Painting stuffs, -	£25, 11s. 3½d.	value.
Pictures. - -	£.6, 2s. 9d.	ditto.
Tin plates, - -	1⅔	barrels.
Sadlers ware, -	£.1, 18s. —	value.
Rock salt, - -	605	tons.
White, ditto, - -	29,806	bushels.
Salt-petre, - -	9	cwt.
	cwt. q. lb.	
Clover-seeds, - -	23 0 6	
Garden-seeds, -	1398	lbs.
Silk manufacture, -	24	lbs.
Rum, - - -	5110 9/10	gallons.
Stationary ware, -	£18, 15s. 2d.	value.
Steel, - - -	93	cwt.
Stockings, cotton, -	2028	pair.
Ditto, worsted, -	96	ditto.
Tea, bohea, - -	36,265	lbs.
Ditto, green, -	15,634	ditto.
Tobacco, - -	113,386	ditto
Toys, - - -	£.71, 18s. —	value.
Upholstery ware, -	£.236, 17s. 6d.	ditto.

Wine,

	hd. gal.	
Wine, French, -	1 $27\frac{7}{15}$	
Port, - - -	1	
Wine, Spanish, -	2 31	
Hoops, - - -	$21\frac{1}{2}$	mille.
Timber, - -	141	tons.
Wooden ware,	£.39, 17*s.* 9*d.*	value.
	cwt. q. lb.	
Cotton, - -	10 — 14	
Brass wire, - -	12	lbs.
Iron wire, - -	15	cwt.
Lattin wire, - -	1	qr.
Cotton yarn, -	908	lbs.
Mohair, - -	133	ditto.
Worsted yarn, -	2	ditto.
Small parcels, -	£.251, 4*s.* 8*d.*	value.

From France.

Cork, - - -	5	cwt.
Drugs, - - -	£.1, 16*s.* —	value.
	cwt. q. lb.	
Prunes, - - -	7 8 16	
Rosin, - - -	4 2 21	
Brandy, - -	$316\frac{6}{15}$	gallons.
	tons. hds.	
Wine, French, -	3 2	

From

From Holland.

Bacon, - - -	4	cwt.
Bark, - - -	330	barrels.
Salmon, fish, -	$\frac{3}{4}$	tierce.
Hulled barley, -	6	cwt.
Succus, liquoritia, -	1813	lbs.
Shot, - - -	15	cwt.
Linseed, - -	6	hds.
Pictures, - -	£.186 — —	value.
Salt-petre, - -	4	cwt.
Clover seed, - -	$7\frac{1}{4}$	cwt.
Brandy, - -	$5\frac{6}{10}$	gallons.
Geneva, - -	$480\frac{6}{10}$	ditto.
	cwt. q. lb.	
Starch, - - -	9 2 24	
Toys, - - -	£.20, — —	value.
Upholstery, - -	£.90, 10*s.* —	ditto.
	qr. lb.	
Iron, - - -	1 12	
Small parcels, -	£.2, 13*s.* 4*d.*	value.

From Portugal.

Cork, - - -	20	cwt.
Figs, - - -	1	ditto.

Oranges

	hd.	*q.*	
Oranges and lemons,	213	2	
	tons.	*gal.*	
Port wine, - -	89	7½	
Canes, - - -	11,600		no.

From Russia.

	cwt.	*q.*	*lb.*	
Hemp, undressed,	2199	—	18	
Ironmongery, -	5630	3	19	
Hamburgh linen,	27			yards.
	cwt.	*q.*	*lb.*	
Tallow, - - -	311	2	9	
	hnd.	*q.*	*no.*	
Deals, - - -	17	2	23	
Spars, - - -	18			no.
Wooden ware,	£.—	13*s.*	6*d.*	value.
Small parcels, -	£.29,	8*s.*	—	ditto.

From Scotland.

Apparel, - -	£.6	—	—	value.
Bark, - - -	397½			barrels.
Beer, - - -	29			ditto.
	cwt.	*q.*	*lb.*	
Books, unbound, -	2	2	—	

Bottles

Bottles, glass, -	2919	dozen.
Cheese, - -	¼	cwt.
Coals, - - -	420	tons.
Barley and malt,	718¼	barrels.
New drapery, -	481	yards.
Small parcels, -	£.600 — —	value.
Herrings, - -	707	barrels.
Glass cases, - -	42	no.
	cwt. q. lb.	
Hulled barley, -	21 2 —	
Sugar, loaf, - -	132 1 2	
Ditto, Muscovado, -	2064 1 18	
Thread, whited, brown,	360	lbs.
Small parcels, -	£.2, 5s. 0d.	value.
Mermits, - - -	722	no.
Small parcels, -	£.193, 3s. 9d.	value.
Kenting, - -	23,146	yards.
Muslin, - - -	1019	ditto.
Linseed, - -	40	hds.
Linen, cotton, and silk manufacture,	£.252, 13s. 11d.	value.
Mats, - - -	10	no.
Salt, (white) - -	20	bushels.
	cwt. q. lb.	
Soap, - - -	2 2 —	
Rum, - - -	5944 9/10	gallons.
	cwt. q. lb.	
Steel, - - -	22 3 —	

Stockings,

Stockings, cotton,	732	pair.
Ditto, thread, -	60	ditto.
Ditto, woollen, -	2400	ditto.
Upholstery, - -	£.206, 11s. 2d.	value.
Wine, Port, - -	2	tons.
	q. lb.	
Brass wire, - -	2 4	
Cotton yarn, - -	1475	lbs.
Small parcels, -	£.18, 0s. 10d.	value.

From Spain.

Shumack, - -	5	cwt.
Figs, - - -	25	ditto.
Raisins, - - -	35	ditto.
Aniseed, - - -	2	ditto.
Small parcels, groceries,	£.1, 4s. —	value.
Oranges and lemons,	90	hnd.
	tons hds.	
Wine, Spanish, -	16 2	
Nuts, - - -	10	barrels.
Canes, - - -	4400	no.

From Sweden.

Herrings, - -	348	barrels.
	cwt. q. lb.	
Iron, - - -	2201 1 4	

Tar,

Tar, - - -	8	lbs.
	hnd. q. no.	
Deals, - - -	16 2 14	
Oars, - - -	1 20	
Spars, - - -	4	

From Carolina.

Linseed, - -	608	hds.
Staves, - - -	120	ditto.
Wooden ware, -	£.15 — —	value.

From Jamaica.

	cwt. q. lb.	
Sugar, Muscovado	21 1 9	

From New England.

Cider, - - -	5	tons.
Staves, - - -	10	hnd.
Plank, - - -	£.150, 5*s.* 9*d.*	value.
Timber, - -	110	tons.
Wooden ware, -	£.108, 7*s.* —	value.

From Newfoundland.

Indigo, - - -	178	lbs.
	cwt. q. lb.	
Gun-powder, -	4 2 24	

Tar,

Tar, - - -	$2\frac{2}{3}$	barrels.
Staves, - - -	24	hnd.

From New York.

Apples, - -	30	bushels.
Cider, - - -	$31\frac{1}{2}$	gallons.
Small parcels, -	£.2 — —	value.
Linseed, - -	3733	hds.
Pot-ashes, - -	9	cwt.
Rum, - - -	$3347\frac{3}{10}$	gallons.
Tar, - - -	24	barrels.
Nuts, - - -	$\frac{1}{2}$	ditto.
	hnd. q. no.	
Staves, - - -	365 — 20	
Hoops, - - -	$\frac{1}{2}$	mille.
Wooden ware, -	£.4, 16*s.* 8*d.*	value.

From Pensylvania.

Drugs, - - -	£.7, 4*s.* —	value.
Indigo, - - -	112	lbs.
Linseed, - -	$1416\frac{3}{7}$	hds.
Buck-skins, - -	337	no.
Rum, - - -	$103\frac{7}{10}$	gallons.
Port wine, - -	2	hds.
Barrel staves, -	156	hnds.
Wooden ware, -	£.3, 10*s.* —	value.

From

From Virginia and Maryland.

Groceries, small parcels,	£.— 8*s.* 0*d.*	value.
Linseed, - -	1012	hds.
	hnd. q. no.	
Barrel staves, - -	125 — 6	
Hoops, - - -		mille.

Exports of L. Derry, for the Year 1792.

To Denmark and Norway.

Apparel, - -	£.2, 14*s.* 0*d.*	value.
Drapery, (new) -	51	yards.
Ditto, (old) -	34	ditto.
Shag, - -	48½	ditto.
Haberdashery, &c.	£.9, 19*s.* 0*d.*	value.
Linen, cotton, and silk manufacture,	£.33, 8*s.* 10*d.*	ditto.
Stockings, cotton,	18	pair.
Silk, ditto, -	6	ditto.
Woollen, ditto, -	60	ditto.
Blankets, - -	2	ditto.
Small parcels, -	£9, 1*s.* 3*d.*	value.

To

To England.

Barrels, empty, -	158		no.
Beef, - -	12		barrels.
	cwt.	*q.* *lb.*	
Books, unbound, -	22	0 21	
Butter, - -	3		cwt.
Copper-plates, and	*cwt.*	*q.* *lb.*	
bricks, -	30	0 13	
Glue, - -	10		cwt.
Cows hair, - -	56		ditto.
Hats, - -	20		no.
Horn-tips, - -	25		hnd.
Hides, untanned, -	3195		no.
Linen cloth, plain,	1,152,529		yards.
Ditto, coloured, -	91½		ditto.
Pork, - -	38		barrels.
	doz.	*no.*	
Calf-skins, - -	332	2	
Upholstery ware, -	£.0,	5*s.* 0*d.*	value.
	cwt.	*q.* *lb.*	
Linen yarn, - -	3825	1 24	
Small parcels, -	£30,	10*s.* 0*d.*	value

To Scotland.

	cwt. q. lb.	
Butter, - -	6 2 0	
	tons. trs.	
Salmon, - -	5 $4\frac{5}{8}$	
	cwt. q. lb.	
Flax, undressed, -	1 0 7	
Hides, untanned, -	1551	no.
Linen cloth, plain,	2340	yards.
Ditto, coloured, -	113	ditto.
	cwt. q. lb.	
Oatmeal, - -	1161 1 13	
	doz. no.	
Calf-skins, - -	233 6	
	cwt. q. lb.	
Linen-yarn, -	338 0 17	
Small parcels, -	£1, 17*s.* 0*d.*	value.

To Streights.

Linen cloth, plain,	6527	yards.

To

To Venice.

	tons.	*trs.*	
Salmon fish, -	31	2	

To Carolina.

Hats, - -	24	no.
Linen cloth, plain,	25,364½	yards.
Ditto, coloured, -	623	ditto.
Stockings, woollen,	38	pair.

To New England.

Linen-cloth, plain, -	799	yards.

To New York.

	q.	*lb.*	
Flax, dressed, -	3	16	
Hats, - -	72		no.
Iron, &c. -	£63,	0*s.* 0*d.*	value.
Linen cloth, plain,	45,748		yards.
Ditto, coloured, -	230		ditto.
Stockings, woollen,	1882		pair.

To

To Pennsylvania.

Flannel, - -	107	yards.
Hats, - -	151	no.
Cambrick, - -	2	yards.
Linen cloth, plain,	44,934	ditto.
Ditto, coloured, -	10,046	ditto.
Stockings, thread,	3267	pair.
Ditto, woollen, -	181	ditto.
Linen-yarn, -	4	lbs.
Small parcels, -	£.—, 5s. 0d.	value.
Linen, cotton, and silk manufacture,	£.2, 2s. 0d.	ditto.

To Virginia and Maryland.

Candle-wick, -	4	cwt.
Flannel, - -	2368	yards.
Linen, cotton, &c. manufacture, -	£.19, 17s. 5d.	value.
Linen cloth, plain,	10,299	yards.
Ditto, coloured -	77	ditto.

Imports of L. Derry, for the Year ending January the 5th, 1802.

From England.

Herrings, - -	50	barrels.
Train-oil, - -	1596	gallons.
Tar, - - -	241	barrels.
Deals, - - -	1166½	no.
Small parcels, -	£21, 0*s.* 0*d.*	value.
Pot-ashes, - -	12,940	cwt.
Beans and Pease, -	2861	barrels.
Soap, - - -	3	cwt.
Starch, - - -	10¼	ditto.
Bees-wax, - -	280	lbs.
Clap-boards, -	6¾	hnd.
Deals, - -	8½	ditto.
Staves, - -	52	hnd.
Timber, - -	358	tons.
Wooden-ware, -	£19, 6*s.* 8*d.*	value.
Apparel, - -	£59, 4*s.* 3*d.*	ditto.
Apples, - -	4	bushels.
Pot-ashes, - -	380	cwt.
Bark, - -	980	barrels.
Beer and Ale, -	1382	ditto.
Blankets, - -	435	ditto.

Books,

Books, unbound, -	3¼	cwt.
Bricks, - -	10	mille.
Cards, wool, -	293	dozen.
Carpets, - -	98	yards.
Carpeting, -	2122	ditto.
Cheese, - -	32	cwt.
	ton. hd. g.	
Cider, - -	1 2 28	
Coals, - -	2309	tons.
Copper, wrought, -	817	cwt.
Ditto, unwrought, -	74¼	ditto.
Beans and Pease, -	44	barrels.
Callicoes, - -	1894	yards.
Cottons, coloured, -	£2129, 0*s.* 3*d.*	value.
Ditto, white, -	174, 0*s.* 0*d.*	ditto.
English muslin, coloured and worked,	74	yards.
Cutlery, - -	£166, 0*s.* 7*d.*	value.
New drapery, -	27,901	yards.
Old ditto, - -	12,110	ditto.
Drugs, - -	£189, 6*s.* 3*d.*	value.
Alum, - -	93	cwt.
Copperas, - -	115	ditto.
Fustic, - -	18	ditto.
Indigo, - -	1725	lbs.
Logwood, - -	139	cwt.
Madder, - -	7½	ditto.
Red-wood, - -	33½	ditto.
Slates, - -	100,000	mille.

Soap,	1	cwt.
Rum,	45,378	gallons.
Steel,	18¾	cwt.
Tallow,	441¼	ditto.
Tar,	107	barrels.
Bohea tea,	95,268	lbs.
Green ditto,	6600	ditto.
Tiles,	354	no.
Tow,	40	cwt.
Tobacco,	94,615	lbs.
Toys,	£29, 9s. 8d.	value.
	tons. g.	
Vinegar,	10 7	hd.
Upholstery,	£21, 8s. 0d.	value.
Bees-wax,	56	lbs.
Whiting,	493	cwt.
	ton. hd. g.	
Madeira,	1 1 35	
Brass-wire,	½	cwt.
Iron ditto,	8	ditto.
Canes,	5500	no.
Hoops,	38	mille.
Mahogany,	4	ton.
Staves,	30	hnd.
Timber,	3	tons.
Wooden-ware,	£42, 8s. 2d.	value.
Beaver wool,	93	lbs.
Spanish ditto,	2¾	cwt.

Cotton

Cotton yarn,	1580	lbs.
Mohair,	48	ditto.
Small parcels,	£227, 19s. 0d.	value.
Shumack,	12	cwt.
Earthenware,	£1257, 15s. 0d.	value.
Flax-seed,	345	hds.
Furs,	£75, 12s. 0d.	value.
Bottles,	73	doz.
Glass-cases,	42	no.
Ditto, ware,	£39, 4s. 4d.	value.
Almonds,	4	barrels.
Aniseeds,	½	cwt.
Carraway,	1½	ditto.
Currants,	9	ditto.
Figs,	8¾	ditto.
Ginger,	6	ditto.
Hulled barley,	2	ditto.
Licorice ball,	654	lbs.
Mustard,	1492	ditto.
Nutmegs,	10	ditto.
Pepper,	1902	ditto.
Pimento,	93	ditto.
Raisins,	26½	cwt.
Rice,	14	ditto.
Sugar-candy,	1	ditto.
Sugar, loaf,	¼	ditto.
Ditto, muscovado,	9174¾	ditto.
Small parcels,	£8, 12s. 0d.	value.

Whited

Whited brown thread,	144	lbs.
Small parcels, -	£343, 3s. 7d.	value.
Goats hair, -	336	lbs.
Hats, - -	448	no.
Hemp, undressed, -	180	cwt.
Hemp-seed, -	3	ditto.
Hops, - -	98½	ditto.
Cotton stockings, -	2304	pair.
Silk and cotton, ditto,	336	ditto.
Thread, ditto, -	18	ditto.
Woollen, ditto, -	30	ditto.
Worsted, ditto, -	39	ditto.
Small parcels, -	£138, 1s. 0d.	value.
Ditto, - -	£2, 11s. 0d.	ditto.
Ditto, - -	138, 1s. 0d.	ditto.
Iron, unwrought, -	2058	cwt.
Sundries, -	£4031, 1s. 9d.	value.
Ivory, wrought, -	5	lbs.
Silk, - -	8¾	ditto.
Lampblack, - -	784	ditto.
Pig-lead, - -	10	cwt.
Sheet, ditto, -	246	ditto.
Shot, - -	28	ditto.
White lead, - -	32	ditto.
Cambrick, linen, -	48	yards.
Canvas, - -	7058	ditto.
Marble, - -	£38, 18s. 6d.	value.
Mill-stones, - -	2	no.

Nuts,

Nuts,	1	barrel.
Rape-oil,	7	gallons.
Seville ditto,	494	ditto.
Train ditto,	63	ditto.
Turpentine,	70	lbs.
Perfumery,	£3, 5s. 0d.	value.
Pewter, wrought,	1¼	cwt.
Pitch,	6	barrels.
Plates, tin,	27½	ditto.
Plated ware,	£73, 19s. 0d.	value.
Rosin,	35	cwt.
Sadlers ware,	£7, 11s. 4d.	value.
Rock salt,	110	tons.
White ditto,	6010	bushels.
Clover seeds,	67½	cwt.
Garden ditto,	2256	lbs.
Grass ditto,	20	cwt.
Silk manufacture,	67¼	lbs.
Silk and cotton,	£14, 0s. 0d.	value.
Seal-skins,	130	no.
Sheep ditto,	100¾	ditto.

From Germany.

Hulled barley,	1¼	cwt.
Licorice root,	474	lbs.

From

From Holland.

Madder, - -	25	cwt.
Smalts, - -	6720	lbs.
Flax-seed, - -	200	hds.
Hulled barley, -	2½	cwt.
Licorice ball, -	3110	lbs.
Geneva, - -	13,120	gallons.
Starch, - -	9¾	cwt.
	tons. hd. g.	
Vinegar, - -	3 1 21	

From Portugal.

	tons. hd. g.	
Port wine, - -	106 1 7	
Canes, - -	10,000	no.

From Russia.

Flax, undressed, -	300	cwt.
Hemp, ditto, -	1000	ditto.
Iron, unwrought, -	258	ditto.
Tallow, - -	174½	ditto.
Deals, - -	5¼	hnd.

From

From Scotland.

Apparel, - -	£24, 4*s.* 2*d.*	value.
Pot-ashes, - -	1665	cwt.
Beer and Ale, -	9	barrels.
Carpeting, - -	4060	yards.
Cheese, - -	¼	cwt.
Coals, - -	187	tons.
White muslin, -	478	yards.
New drapery, -	11,604	ditto.
Alum, - -	60	cwt.
Earthenware,	£329, 14*s.* 0*d.*	value.
Herrings, - -	3739	barrels.
Glass-bottles, -	1939	dozen.
Glass-cases, -	252	no.
Sugar-candy, -	15¼	cwt.
Ditto, loaf, - -	31½	ditto.
Ditto, muscovado,	1571¾	ditto.
Whited brown thread,	95	lbs.
Small parcels, -	£48, 5*s.* 0*d.*	value.
Cotton stockings, -	250	pair.
Small parcels, -	£44, 3*s.* 4*d.*	value.
Iron and Hardware,	281, 13*s.* 4*d.*	ditto.
Kentings, - -	965	yards.
Vitriol, - -	34,500	lbs.
Ribband silk, -	26¼	ditto.
Silk manufacture, -	3½	lbs.

Rum,

Rum, - -	22,248	gallons.
Tobacco, - -	160,353	lbs.
Toys, - -	£6, 0s. 0d.	value.
Upholstery, - -	£8, 1s. 6d.	ditto.
Hoops, - -	6	mille.
Staves, - -	100	no.
Woodenware,	£14, 0s. 0d.	value.
Cotton yarn, -	4365	lbs.
Parcels, -	£47, 9s. 0d.	value.

From Sweden.

Iron, unwrought, -	994¼	cwt.
Deals, - -	12¾	hnd.

From New York.

Pot-ashes, -	461	cwt.
Flax-seed, -	7547	hds.
Tanned hides, -	25	no.
Flour, - -	2774	cwt.
Rye meal, - -	413¼	ditto.
Indian ditto, -	1333½	ditto.
Deer-skins, -	216	no.
Bees-wax, -	903	lbs.
Staves, - -	1366	hnd.
Cotton wool, -	90	cwt.

From

From Pennsylvania.

Flax-seed, - - -	4241	hds.
Tanned hides, -	30	no.
Flour, - -	591¼	cwt.
Rye-meal, - -	548¼	ditto.
Indian wheat, -	9596	ditto.
Undrest deer-skins,	118	no.
Tobacco, - -	31,905	cwt.
Bees-wax, -	168	lbs.
Staves, - -	1596	no.
Wooden-ware, -	£1, 12s. 0d.	value.
Pot-ashes, - -	39	cwt.

From Virginia and Maryland.

Bacon, - -	19	cwt.
Flour, - -	67	ditto.
Rye meal, - -	472½	ditto.
Indian wheat meal,	8527¾	ditto.
Rosin, - -	298¼	ditto.
Rum, - -	544	gallons.
Tobacco, - -	422,887	lbs.
Staves, - -	12½	hnd.
Small parcels, -	£57, 13s. 9d.	value.

From

From the West Indies.

Muscovado sugar,	-	880½	cwt.
Rum,	- -	942	gallons.

Exports from Londonderry, for the Year ending January the 5th, 1802.

To England.

Beef,	- -	728	barrels.
Butter,	- -	106¾	cwt.
Hides, untanned,	-	5115	no.
Kelp,	- -	93	tons.
Linen cloth, plain,		3,332,145	yards.
Pork,	- -	831	barrels.
Calf-skins,	- -	784	dozen.
Wooden-ware,	-	£10, 0*s.* 0*d.*	value.
Linen-yarn,	-	6243¾	cwt.
Small parcels,	-	£132, 13*s.* 10*d.*	value.

To Scotland.

Beef,	- -	40	barrels.
Butter,	- -	8	cwt.

Feathers,

Feathers, - -	6	cwt.
Flax, dressed, -	5	ditto.
Ditto, undressed, -	1284	ditto.
Cows hair, - -	1	ditto.
Hides, untanned, -	97	no.
Cow-horns, - -	26½	hnd.
Linen cloth, plain, -	18,007	yards.
Calf-skins, - -	32¼	dozen.
Wooden-ware, -	£2, 0s. 0d.	value.
Linen-yarn, -	2470½	cwt.
Small parcels, -	£61, 0s. 0d.	value.

To New York.

Beef, - -	24	barrels.
Bread, - -	75	cwt.
Linen cloth, plain, -	10,653	yards.
Oatmeal, - -	75	cwt.

To Pennsylvania.

Beef, - -	489	barrels.
Bread, - -	638	cwt.
Candlewick, -	74¾	cwt.
Flax, dressed, -	—½	ditto.

Linen

Linen, cotton, and silk manufacture, -	£1565, 1s. 11d.	value.
Linen-cloth, plain, -	134,776	yards.
Ditto, coloured, -	21,676	ditto.
Oatmeal, - -	894	cwt.
Molasses, - -	83	ditto.
Woollen stockings, -	1899	pair.
Linen-yarn, - -	1	cwt.

To Virginia.

Linen cloth, plain, -	5049	yards.

Respecting the trade of Coleraine, I had no occasion to resort to any other office than that of the Collector. From Mr. Marcus Hill I had the favour of the subjoined report on this subject.

Port

PORT COLERAINE.

Amount of Duties received on Goods imported and exported for three Years, ending 25th March, 1801.	*Amount of Duties received on Goods imported.*			*Amount of Duties received on Goods exported.*		
	£.	s.	d.	£.	s.	d.
Defalcation this year, I attribute to the rebellion, year ending 25th March 1799, - - - -	4820	18	7	230	0	7
Encrease this year, to the demand occasioned by the foregoing, 1800,	7867	—	1	165	12	8
The reduction of duty here must be owing to our misunderstanding with the northern powers, as since that period the duties have been considerably greater than we know of heretofore,	7015	5	6	154	13	5
	19703	4	2	550	6	8
Annual average for three years, - - £.	6567	1	9	183	8	11

"The importations consist chiefly of sugar, salt, coals, timber, deals, earthenware, hardware, and herrings. The exportations, principally of beef, butter, hides, and linen yarn. Coleraine is not permitted to import certain articles, such as tobacco, spirits, teas, and wines; the loss to our trade must, of course, be considerable, as our merchants are obliged, for the most part, to bring all those commodities from Belfast. If this restriction was done away, to which there seems to be no reasonable objection, and the bar, at the entrance of our harbour, made navigable, or else a canal cut from Portrush to Coleraine, or to communicate with the Bann river, near to the sea, I have no doubt, from the situation of the town, that the trade would materially increase, as the intercourse with the internal part of the county would be much greater.

M. J. HILL.

In addition to this statement, very accurately drawn up, and very obligingly communicated by the Collector of Coleraine, little remains for me to remark. There are, however, certain articles of commerce, which are brought to this town by land carriage, and which, of course, do not fall under the cognizance of the custom-house. These articles are, chiefly, flannels, frizes, rateens, serges, cottons, haberdashery,

haberdashery, stationary, and other such goods of light weight and great value.

By coasting vessels, dry fruits, dye-woods, starch, bleaching stuffs, porter, English strong-beer, iron, wrought and unwrought, are carried to Coleraine for the purposes of retail. There is, besides, an intermediate trade through Belfast, which, compared to that carried on immediately with Dublin, may be estimated, perhaps, in the ratio of ten to one. I am informed, that scarcely more than a single vessel has arrived annually from the latter port, for the last three years.

The principal foreign trade is with Gottenburg, Christiansund, Dantzic, Memel, and Rotterdam. This trade is carried in vessels, freighted by the merchants, but not belonging to the port of Coleraine. The shipping of this place is very inconsiderable. Vessels of 200 tons burthen, which draw but $8\frac{1}{2}$ feet of water, have passed the bar with safety. Vessels of this build belong, for the most part, to Dantzic. The bar is a very formidable obstruction. It is a shoal of sand, thrown up between the tide and fresh-water current, entirely across the outlet, or estuary of the river Bann. Vessels, which are not skilfully piloted, or fortunately forwarded by wind and tide, are in great danger of touching on some of these sand banks; and, if once retained,

have but little chance of escaping the breakers, which roll imperceptibly over the shoals.

It is much to be desired, that a canal could be effected to the town from some safe bason. I have heard of a project to cut one from Port-rush, a distance of more than four miles, through a hilly and rocky country; another from Port-stewart through Mr. Crommie's bog, a distance of three miles, has been spoken of also. I venture to think, that a bason could be formed inland, near Sir George Hill's bathing lodge, and that a cut made thence through the warren, of less than half a mile, would bring vessels safe above the bar and the fords.

SECT. 16.—*Mills of every Kind; Potteries; Sugar-houses, &c.*

Paper Mills.

There is one erected near Coleraine, by the Messrs. Church of that place; it is to be wished, that this company may succeed; but there are some difficulties, as I learn, respecting the duties, which have cramped its exertions.

There is another, on a wretched plan, constructed on the Fahan, which makes those sorts of paper, called brown thirds and lapping paper. The manager alledges, that there is no demand

for

for his white paper; he says, that the rags are sooty, and the water mossy. The machinery consists of a single wheel and two vats, works 40 reams per month, and is rented at £.40 per annum.

Flour Mills.

Within the county, there are but few; several are in the neighbourhood. The principal mill, belonging to Derry, was that of Sterling and Horner, at Pennyburn. Its machinery seemed well constructed; besides the flour-mill, there was machinery for making oil. Two corn-mills also were annexed to the premises; one driven by water, the other a wind-mill.

Mr. Livingston has another flour-mill, near Walworth; and Messrs. Church a third, near Coleraine. These last are on plans rather confined; however, the machinery and conveniencies of Mr. Livingston's mill are in good condition, and of no bad construction.

Corn-mills are too numerous to be inserted. The toll varies from the 16th to the 32d grain. There is a wind-mill near the water-side of Derry.

In most mills, besides the *mouter*, there is an exaction called the *bonnock*, which originates in the giving, out of every barrel of *shilling*, as much as

would make a cake, (provincially *bonnock*) as a douceur to the miller.

Flax-mills.

These also are common; the price is 1*d.* per *lb.* for dressing.

Tuck-mills.

I know of but two, one of which was till lately rather extensively carried on, in all its departments; but, as the spirit of tillage encreased, the sheep having given way to the plough, the employment of the mill is proportionately diminished. This mill is on the Balteagh river; the proprietor is Mr. Thomson. The second is on the Clanrandle stream, and is almost too rude and insignificant to be mentioned.

Potteries.

No country seems better adapted for this manufacture; besides granites and granitines, we have the purest flint in our quartz, and in our white argil of the

the Bann we have excellent clays. At present, there are not any wares made in L. Derry, except of a coarse fabric, composed of the red clays of the sub-soils, which are coarse, and abound with iron; these all burn into a red colour, and consist of pans, crocks (glazed and unglazed), pipes for bleach-greens, pots for gardens, &c. The chief manufacture is at Agivey; I saw a very inconsiderable one near Castle-Dawson. When such materials, as are above mentioned, are found near great turbaries, a good speculation opens to the skilful capitalists—but where are they?

Sugar-houses.

There is a sugar-house carried on by a company at Derry, which manufactures lump sugars of good quality, and to a considerable amount.

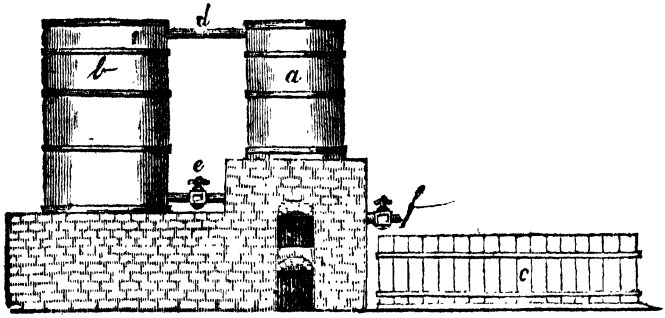
Breweries.

The chief breweries are at Coleraine, by Mr. Galt; at Moneymore, by Mr. Millar; at Newtown-limavady, by Mrs. Osborne; and at Derry, by Mrs. Bell.

Communication

Communication by James Acheson, Esq. of Oak, L. Derry.

New Apparatus for Brewing.



" Fill the heating vessel, *a*, with water, to the level of the pipe, *d*, the cocks being both shut; the malt is put into the vessel, *b*, which has the bottom pierced and covered as usual; the malt is bruised between rollers, and the cock, *e*, stopped; apply the fire; when the water heats, it will flow from *a*, through *d*, into *b*, on which open the cock, *e*, and fill in water into *a*, until it stands in both vessels at the level of the pipe *d*; continue the fire until the liquor comes to boil, and your wort good; put the hops into *a*, and

continue

continue your fire until your liquor is sufficiently boiled; the cock, *f*, runs the liquor into the cooler, *c*. The advantage of this apparatus is evident; it may be made of a size suited to the wants of the family. Brewing will not, with it, be more troublesome than any common culinary process of the kitchen."

Salt-pans.

At Derry, there is one belonging to Mr. Darcus, which makes salt, and burns lime. Mr. Major has another, on a similar plan, close to the beach, on the north of the Fahan. The lighter, which carries 20 tons of salt to Strabane, at 5*s*. per ton, brings down the lime-stone, from near Port-hall, at 2*s*. 6*d*. the ton.

Distilleries.

At Castle-Dawson there is a large still; at Coleraine, Mr. Aiken kept another. At present, the only distillers in that town are Messrs. Hopkins.

There is a pernicious system of distilling oats unmalted; you see the oats quite plain in the grains. The great stills pay duty according to their doublings,

lings, that is, for every barrel of malt, as if it yielded at the rate of 12 gallons; but a barrel of common malt yields (according to my information, for I am not at all in the way of knowing it from personal inspection) at the rate of about seven or eight gallons; to make up the deficiency, oats are put in raw into the keeve. The regulation of 23 doublings in six days is against the quality; for the haste to accomplish this rated minimum is such, that the still must be forced night and day, Sunday included. The great distillers of Dublin, who have every convenience on the most ample and improved scale, may perhaps accede to this the more willingly, as it tends to put the country distiller out of the field of competition, provided he is honest enough to attempt at fair dealing. Be that as it may, the present excise operates, in this particular, as a premium on private distilleries; I may safely say, that nine-tenths of the barley, grown in our county, is disposed of to private distillers.

I pretend not to assert, that if our country distillers had the same skill and apparatus as those of England, and still more those of Scotland, they would not be able to cope with the excise, and thereby defeat the private distillers. But I venture to say that, considering the imperfect state of their implements and knowledge, it is impossible, that the country distiller can be competent to these effects.

I have

I have heard of a company of distillers, who have several times burned the bottom out of their still, by endeavouring at the haste requisite for profit.

Another very injurious grain is thrown into the malt without reserve. It is called *sturdy*, and is the *lolium secalinum* of the botanists. This is so powerful a narcotic, that, when the barley was made into meal during the scarcity, I have heard very strange effects produced by eating the stirabout made of meal, in which this abounds. In particular, when I lodged at the shore, near Down-hill, in summer, 1800, some of Lord Bristol's labourers, who were missing after breakfast, were found fast asleep from this cause; the next effect is extreme weakness and debility. This plant grows greatly in run out grounds. The farmer could easily clear his barley of it; but the distiller, I am told, does not object to it, because it adds to the intoxicating power of his whiskey. I hope some notice will be taken of this, which I know to be fact.

SECTS. 17, 18, 19, 20.

Nurseries, Plantations, and Gentlemens' Seats.

There are few nurseries in this county. One of no great note in the island of L. Derry, one or two in the neighbourhood of Port-glenone, and one small one near Moneymore, are all that I can recollect of those, which are kept by professed nursery-men, who have young trees for *sale*.

As to planting among farmers, whatever vestige remains in the hedge-row of the field, or clump about the antient dwelling, it is now almost utterly disused. The short tenure, the small farm, the heavy rent, and the want of other encouragements, account but too well for this sad neglect. Whatever new plantations may be enumerated, are the works of gentlemen, or successful men of business.

Mr. White, of this vicinity, has ornamented a wild and romantic scenery. The two Messrs. Magill, below him, have covered the rough ground with some trees.

Among persons of the first order I may class Mr. Staples, of Lissane. The house is neat and commodious. The elegance of this gentleman's taste has not only decorated a secluded recess of mountainous

tainous territory, but seems even to have caused an imitative emulation, in a way proportionate to their situations, among the neighbouring gentlemen, and even in the poor mountaineers. I regret, that I have not been favoured with any detail of the management, by which Mr. Staples's retirement has been so beautified. The trees are beech, larch, lime, chestnut, sycamore, with ash, firs, and pines; by far the greatest part planted by the present proprietor. The river is managed so as to form a beautiful sheet of water, surrounded by stately trees, and a smooth green margin. This water afterwards tumbles over an obstruction, which produces an artificial cataract; there is beside it a neat bridge, built by the famous Ducart. Whoever has not seen Lissane, has not seen one of the greatest ornaments of our county.

Between Lissane and Coagh, Mr. Robert Magill and Mr. G. Ladely have neat dwellings, and are dressing their grounds, not without effect.

At Springhill are the finest trees in this county. They spring from a limestone terrace. Sweet chestnuts, yews, silver firs, stone pines, balm of Gilead, firs, beech, oak, ash, with many other varieties of forest trees and shrubs, have arrived on this favourite spot to the highest state of beauty, size, and station. The mansion is built in the old castle style. Upon the whole, this situation, with its improvements, brings

brings to mind something of the antient dignity of resident landlords.

The plantations, belonging to Castle-Dawson, are not so well laid out; they serve, however, to do away the gloomy air of the bogs, through which they rise. I understood, that the oaks were destined to the hatchet. Without these, certainly the Scottish firs, in straight lines, will give an imperfect relief to the air of flatness and straight lines, which already injure the effect, which trees are calculated to produce. The house is situated low, and is built something in the old style.

Mr. Spottiswood has planted with good success at Ballaghy. His farming inclosures are thriving, and well preserved, and his example, as an useful and ornamental farmer, is likely to be impressive in that neighbourhood.

There are a good number of trees scattered about Mr. Dawson Downing's house, at Rose-gift; and at the old castle, now occupied by Mr. Madden, some fine old trees revive the idea of former and better times.

The house of Ballyscullion is so uncommon as to plan, that even the following imperfect sketch may be desirable to the lovers of architecture.

The ground plan is an oval, whose greatest diameter is 94 feet, the shorter is 84 feet; around the building are disposed 20 fluted Corinthian pilasters,

of

of two feet nine inches in diameter; the intermediate spaces are faced with stone, quarried in the neighbouring mountains, in colour resembling the Portland stone. On the frieze are the following lines in gold letters, which encircle the house.

" Hic viridi in campo, templum de marmore ponam,
" Propter aquam, tardis ingens ubi flexibus errat
" *Bannius*, et tenui praetexit arundine ripas."

Of these lines, the literal translation is,—" Here is a verdant plain; I will place a temple of marble beside the waters, where the vast Bann strays in sluggish windings, and clothes his banks with tender reed."

How many in this neighbourhood would wish to see the words of the poet, applied to the noble possessor, still further realized.

" In medio mihi Cæsar erit, templumque tenebit."

The northern face of the building presents a stately portico, supported by six pillars, similar to the pilasters, as to order and dimension. On the frieze of the portico, the following Greek verses are inscribed in large gold letters.

" Αὐλικα ανακλινεσθε θυρᾳι
" Πολλος γαρ ενεστι πλουτος
" Και συν τω πλουτω
" Ευφροσυνη τεθαλυια."

The

The translation is almost literally this.—" Immediately. open ye doors, for much wealth is within, and, with that wealth, fresh-springing benevolence."

Over a neat entablature, is raised an attic story, 12 feet in height; the building is crowned by a dome, in which is an elegant sky-light. The hall is in measurement 24 feet by 22½ feet, ornamented by admirable statues of the Apollo of Belvedere, and the Vatican Mercury; the busts of Cicero, Demosthenes, Seneca, and Pericles, of fine statuary marble, are placed in niches. The great stair-case is constructed geometrically, in the centre of the house; it is of cut stone, carrying with it a back stair-case, occasionally communicating; these form a kind of double spiral, and are both lighted from above. A number of busts and statues are placed in niches, along the stairs and lobbies.

The drawing and dining-rooms are on the first floor; each of these is a segment of an ellipse, 36 feet long, 24 feet wide, and 18 feet high: both rooms are ornamented with fine paintings. The library is 70 feet by 22½ feet. The upper rooms are sleeping chambers, each being the section of an ellipse.

From a small room on either side of the hall, a coridore is extended, which corridores are intended to conduct towards two large galleries, one for the paintings of the *Italian*, the other for those

of

of the *Flemish* school: these galleries are to be 82 feet by 25.

Two large squares of offices, each 110 feet, are to be ranged in front of the galleries. All these are to be faced with cut stone, from the quarries near Dungiven. When completed, the line of building in front will extend nearly 350 feet. I add a view of this very interesting and superb edifice.

Lord Bristol has planted a considerable number of trees near Ballyscullion house. They lie too far from the mansion, and are situated too low, to give any additional effect to this princely edifice. It is to be regretted, that the lawn around is not yet made to correspond with the rest of the noble and diversified scenery and landscape.

At Magherafelt, Mr. Patterson has planted; and in the neighbourhood, Mr. Henry Patterson has a neat dwelling, ornamented by trees, and giving the idea of snugness and good taste.

Several gentlemen have ornamental plantings and good houses, both which are greatly required in the dreary half valley of the Bann; Mr. Ellis, of Innisrush, Mr. A. Orr, of Landmore, Mr. Forrester, of Aghadowey, Mr. Anthony Forrester, near Maghera, Mr. James Orr, of Keely, and Mr. Orr, of Ballybritain.

At Bovagh, there is a good quantity of old timber; and at Aghgivey, Mr. Lecky has a demesne, with

plantations,

plantations, where Mr. William Orr is now resident.

Mr. Samuel Lyle had done something considerable in the planting way, before he disposed of his place at Greenfield to Mr. Bennet.

The late Mr. Richardson, of Summer-seat, was, unquestionably, the first planter of the county. The soil, on which great part of his extensive planting was made, consisted of a stiff and spouty blueish clay; by trenching and draining, and by great care and expence, his trees have come forward with rapidity. On the high gravel bank, which is wooded to the top, he built a neat banqueting house, or pavilion. It overlooked the water-fall of the Bann, at the Cuts; the town, bridge, and improvements belonging to Coleraine, were viewed to the north; opposite, is the high mound called Mount Sandle, which the late and the present proprietor of Summer-seat have planted and guarded, I hope, with as much effect as good taste. The mansion-house, I learn, was burned some time ago; the present dwelling-house has been formed out of the offices.

Jackson-hall demesne contains some well-grown timber. The situation is not without scenery. The mansion is of brick, in a peculiar style, somewhat Chinese, as to railing and windows. It is, in the absence of the proprietor, tenanted by one of our worthiest and most hospitable country gentlemen and farmers, Mr. Lyle.

Mr.

Mr. Tittle, near Coleraine, is a remarkably neat improver.

Mr. Blacker has commenced the project of modernizing the antient, but not unpleasing demesne, of Millburn. There are some trees, mostly apple-trees, of which there seems to have been a flourishing orchard; the Scottish fir had begun to decay, after having attained a full size. The north-west wind is screened off this place by the opposite high bank of the Bann.

The same cause, it is to be hoped, will contribute to the growth of Mr. Curtis's young trees; some of them are rather exposed too high. Mr. Curtis has effected considerable improvements upon a rocky bank. The stile of his house and ground is somewhat peculiar. A West Indian must be allowed to indulge his long acquired habits. I only lament, that we have not more such residents, who benefit the laborious classes in the best possible way, by affording them plenty of work, and well paid wages.

From Mr. Crommie I learned, that many thousands of trees had been planted by himself; but many of these had fallen before the merciless nor-westers. I had great pleasure in observing several healthy young trees, of various sorts. Thorn hedges, which shrink and pine in the other neighbouring farms, succed with Mr. Crommie, in the more

sheltered parts. There is a good sheep-walk here, enclosed by stone and lime. The mansion-house is among the first in our county.

At Mr. Mackay's lodge, called Prospect, no tree could grow, on account of its exposure to the sea breeze. Even quicks are stunted, and driven away in the rake of the blast.

Mr. O'Neil also has a lodge here, and has commenced the task of improving.

On the west of the Bann, Mrs. Robinson has planted with success. I understand that this lady is a very zealous farmer. The lodge, which belonged to the late Doctor Barnard, is pleasantly and conveniently situated.

The Glen of Down-hill, opening to the sea, at Port-vantage, to the north-east, winds round the sloping lawn, whose termination above is a continued escarpment, disclosing, where the planting has not succeeded, the rugged and over-jutting masses of the table basalt. Amongst these rude masses, winding walks are laid out with taste; the nakedness is generally relieved by abundant crops of grasses, chiefly bromus and avena elatior; and not unfrequently the brow of a rude ledge is beautifully decorated by the rich yellow and green of various trefoils, mosses, sea-pinks, and sea-campions. The glen, enclosing the lawn, is curved, nearly in the figure

figure of a horse-shoe, whose two heels are the opening to the north-west; the bottoms have been dressed into meadow, and the rugged declivity, of each side, trenched, planted, and intersected with walks. It is here, that the eye at once discerns the deadly effect of the north-west wind; for, on examining the condition of the trees, at either opening of this glen, you find every thing blighted and stunted until the place, where the interior side of the curve landlocks the exterior; after which, the planting becomes healthy and flourishing.

The reader is here presented with an elevation of Down-hill house. In view of the south front, is the Mausoleum. This elegant structure was erected by the present Earl to the memory of his brother, formerly ambassador to the court of Spain. The statue of this Earl is placed in an elevated station. The whole of this erection is singularly beautiful, and, I believe, unique.

The following quotation from Virgil, marked in large gilt letters, around the mausoleum, testifies the fraternal affection of the living, to the departed Earl.

" Ille meos errare boves, ut cernis, et ipsum
" Ludere quæ vellem calamo permisit agresti."

The Mussunden temple is also a beautiful and singular erection. The interior is fitted as a library, and

filled with books; around the outside, in gilt letters, are the following verses from Lucretius:

" Suave mari magno, turbantibus æquora ventis,
" E terrâ alterius magnum spectare laborem."

A Catalogue of the principal Pictures and Statues at Down-hill and Ballyscullion.

At Down-hill.

A Madonna della sedia—a very fine copy of the picture by Raphael, formerly in the Pitti palace, at Florence, now in the repository at Paris.

Sharpers at cards—an admirable copy of a picture by Caravaggio.

Christ, bearing his cross, by Guido—an original.

Achilles, drawing the body of Hector round the walls of Troy, by Gavin Hamilton.

A bust of Socrates—very good, somewhat mutilated.

A moon-light piece, by Moore.

A basso relievo—very excellent subject—Socrates detecting Alcibiades in the society of courtezans.

A holy family—by Baroccio.

A ditto, in repose—by ditto.

A landscape—by Hackert, a copy of one of Poussin.

A ditto—

A ditto—by ditto, copy of the Altieri—Claude.

The ruins of the temple of Janus—a good mosaic.

A Cupid, bending his bow—an original, by Correggio.

Virgin, and child—original, by Pietro Perugino.

St. Cecilia—original, by Guercino.

A view of the lake Nemi— } very fine landscapes,
A view of the lake Albano— } by Jones.

A view of the lake Nemi, by Jacob Moore.

The death of Lucretia—the chef d'œuvre of Gavin Hamilton.

The cardinal virtues—on gold grounds, copies from Guido.

Venus and Cupid—copy from Titian.

St. Petronilla—ditto, from Guercino.

A landscape—an excellent copy from an original, by Salvator Rosa.

St. John—original, by Guercino.

Vanity and modesty—a copy from the original, by Leonardo de Vinci.

School-master—an admirable copy from Titian.

Two landscapes—original, by Orizonte.

Madonna and child—by Pietro Perugino.

Return of Priam with the body of Hector—by Durnot.

Two pieces—groupes, taken from the school of Athens.

A statue of Cicero, in consular robes.

Several fine gesses of famous statues at Rome.

I can

I can, only from memory, give an account of the pictures at Ballyscullion, as follows:

The Transfiguration—a most wonderful copy of the original of Raphael, by Durnot.

Virgin and child, Magdalen, St. Jerom, and two angels—a fine copy of the original by Correggio, considered as his chef d'œuvre, taken from Parma by the French.

Two landscapes—original, by Claude Lorraine.

A landscape—a view in Wales, by Barret.

Death of General Wolfe, by West.

A Magdalen—by Guido, original.

Adoration of the Shepherds—a fine original, by Titian.

Two landscapes—by Rysdael, original.

One ditto, small, by Wouverman—original.

Three sea-views, by Vernet—original.

The woman taken in adultery—original, by Lucas Cranach.

The Four Evangelists, by Albert Durer—original.

A good copy of the Aurora of Guido.

St. Peter and St. Paul—a copy of the original of Guido.

The Laocoon—in gess.

Several good busts.

Entering

Entering the eastern glen of Down-hill, you pass the lawn, on either side of which the planting consists of the almost grassy green of the larch, well contrasted with the bluish hue of the pine and Scotch fir. Through this planting, nothing can produce a more romantic effect, than the presentation of the tabular, and sometimes almost columnar basaltic rocks, whose naked protrusions and wild ruggedness prevent the new-mown lawn and decorated slopes from tiring the fancy too much, by the recollection of artificial labour. To the right, over the planting, reigns the majestic mausoleum, which, together with the uppermost fringe of the branches, is projected on the sky, whose clear blue light gives to the eye the exact outline of the columns, the statue, and the dome. Along the same range appear the hay-cocks, and, as you shift along the continually changeful course of the side-banks, the eye catches the ruin of an old chapel, and of the wall enclosing an antient burying ground. Meanwhile the right bank bends off to the north, and then gives place to a new swell, which rises to divide the passage towards the north. The southern declivity of this slope is planted, and thus a new outline is given to the remainder of the ravine.

The jutting and retiring curves of the bank are covered with foliage and rocks. The natural channel of a stream, which tumbles over the rocks at two separate places, produces two pleasing water-falls.

falls. Immediately on passing the wall, the enchantment dissolves, and you find how slender is the partition between a poetic elysium, and the common place occupation of rustic life.

Lord Bristol has planted another very extensive bank at Bally-maddigan glebe. Ash, oak, willow, pine, lime, horse-chestnut, spruce, larch, are thriving luxuriantly. The soil is sometimes blueish clay for two feet, but by trenching, two or three spades deep, it has been much improved. Several young trees, which might bear under lopping, are stifling others, which cannot be pruned; among the former, the elms, among the latter, the silver fir.

The blighting effect of the north-west is equally destructive to the quicks, planted behind the shelter of high loose walls, in the divisions of the higher grounds. The same is true every where else on this coast, in the same exposure. The trees and hedges seem to fly from the enemy; their scanty growth sprouts all from the side most distant from the sea, leaving a ragged, wounded, and blighted rear to the destructive pursuer, so soon as they over-top the screen, whether it be natural or artificial. The best possible mode, for planting in exposed situations, is to throw up ditches, topped with broom, and behind whose shelter the seeds of the hardiest forest trees are to be dibbled in thickly. It is not until these have grown to a considerable height, that we can hope for trees of a more delicate constitution. I must not forget, that the salix caprea, or black sallow,

low, seemed alone to endure the storms from the north-west; I give this hint, that experiments may ascertain the fact more generally.

Some good dwellings, and even some plantations occur, after passing through the eastern sands of Magilligan. The chief of these are, Castle-lecky, Mr. M'Niel's, Mr. Cust's, and Mr. Cuddy's.

Belarena, the seat of Mr. Gage, has been well planted with variety of forest trees and shrubs; considering the lightness of the soil, which, for the most part, is sandy, these plantations succeed remarkably well. There are good and spacious enclosures of stone-wall. The antient timber has a respectable appearance. The mansion is a solid and capacious addition of modern to antient building. But the dark colour of the basalt stone, which remains without rough-cast, added to the lowness of the situation, prevents the improvement from having the due effect upon the eye of the passenger. There are good gardens and orchards at Belarena.

Formerly, trees grew very well in the low lands of Magilligan. Vestiges of antient planting are still existing; even the sallows, which clump some cottages through this flat, are a great relief to the view. The farmers think, that some great change has happened to the climate, because timber succeeded better in remote periods than at present. I rather think, that the sea is gradually retreating below the antient level,

level, and that this circumstance may influence the soil. Undoubtedly, all these flats have been submarine, at no very remote epocha. Shells abound two miles to the interior of Magilligan in dry sand; a certain proof, that these materials, which decay in dry exposures, have been laid in their present beds, at a time, possibly, within the era of civilization in this country.

Fossil timber is found in Magilligan very commonly, and, what is remarkable, a great part of it is yew. Oak is raised in small bogs west of Newtownlimavady.

Mr. M'Causland, of Fruit-hill, has been eminently a planter, nor is there any relaxation in his spirited undertakings. As to good taste, it is gratifying to see the successive expansions of different generations on a paternal property. Although one cannot admire the straight lines, and right angles, with their contents of undiversified trees, yet, when a modern planter, who evinces his own good taste, spares the works, which had given pleasure to an ancestor, through affectionate piety, one is more disposed to love the heart, than to blame the mind, which consecrates, amidst this antique scenery, the tenderness due to the amiable dead.

The mansion of Fruit-hill may be impeached with the common fault; it is a piece-meal addition upon addition. Yet it is neat, and boasts, I think, one

of

of the best and pleasantest rooms in the county. The garden is extensive, and surrounded by a superb wall. The bounds of this work enjoin me not to dwell, as I otherwise would, on the other improvements of this most courteous and hospitable abode.

Streeve is the dwelling of Mrs. M'Causland. The timber around it is respectable. The gardens and orchards are extensive, and well preserved; but nothing is so ornamental to this retirement, as is the presence of the kind and amiable mistress.

Mr. Ross, of the Lodge, has a neat dwelling, handsomely seated on the bank of the Roe, close to Newtown. The steep declivities are well clothed with thriving trees; the rest of this improvement is laid out in lawn, skreens, and clumps.

Daisey-hill, the seat of Mr. Dominick M'Causland, is one of our very best examples of modern improvement. The rich levels along the Roe, when dressed into meadow, with the belt of planting on the inner banks; over this, the clumping of the high gravel swells; the winding of the river; the continual variety of surface, and outline, from the bridge of Newtown to the end of the deer-park; the chearful appearance of the town and country; all together give an air of beauty, and even of magnificence. There are good gardens and orchards, well enclosed by walls. The dwelling, with its squares

of

of offices, is in the first stile of that accommodation, which values no expense.

At the foot of Ballyness, 10 acres were pointed out to me, which had been laid out by the late Marquis of Waterford for a plantation. This useful work has not proceeded beyond the mere ditching, though of many years standing.

Mr. Ogilbie, of Ard-N'Argle, has an excellent house, on a commanding situation over the Roe. His plantings are rising to the utmost of his wish.

Farlowe is a neat and sequestered retirement. Mr. William Moody has a good orchard, and is well sheltered. Contiguous to this, is the hospitable residence of old Mrs. M'Causland; it forms two sides of a square, the other two are expressed by thick ranges of planting. It is altogether the neatest thing, in the stile of the English cabin, in our county; within are very good and lofty apartments, connected by corridores.

Oatlands, the farm of Mr. Cluinh, is a good dwelling; it stands rather low, and, from its exposure to the sea-breezes, is rather unfavourably situated for planting. There are good gardens, well planted with fruit trees, in and near Newtown. Mr. Huey has a garden, containing eight acres within a high wall. Mr. Campbell has a large garden, in excellent order, with good brick walls, well lined with fruits of the first quality, which, at the appointed

seasons,

seasons, are plenteously furnished at his most hospitable board. The Rev. Mr. Hamilton has a neat lodge, with planting at Bessbrook. The Rev. Mr. Bruce has greatly improved the glebe-house. His grounds and trees wear the appearance, correspondent to the genteel taste of the inmates of Tinlagan.

Walworth, the seat of the Right Hon. Mr. Beresford contains a large tract of antient and venerable forest trees. This furnishes an example of the value of plantations; for, though the soil is no better, in general, than a cold till of blue clay, with shingle of schist, and spouty incoherent moss, yet oak, ash, sycamore, with many varieties of the firs, have arrived at great perfection. Walworth has greatly the air of a forest on the continent. Very little of the improvements appear from the road. The dwelling is a neat lodge; the antient gardens, though old, are in good order, and the orchards very productive. The lowness of the situation, with the prospect of large flats of the ouzey beach, when the tide is out, operates against the hope of much chearful beauty. However, when the tide is full, and the sun setting over the Magilligan ranges, the charming promontory of Benyevenagh, seen through the foliage of thick woods, is not without traits of the picturesque.

At Mr. Sterling's are the remains of the antient fort, flankers, and bawn. The present dwelling and offices occupy part of the old foundation. Mr. Sterling possesses one of the best and earliest gardens of the county, well walled, and stored with excellent fruit trees.

The improvement of Wilsborough brings this comfort to the present possessor, that, whatever rude outlines had been sketched by his ancestor, the whole of the decoration is a creation of his own.

As a planter, Mr. Scott stands nearly in the same eminent point of view, as he ranks among our farmers. According to my information from this gentleman, young trees can be had from Scotland at 5*s.* per thousand, equal to any from Derry or Port-glenone, which sell at from 6*s.* to 8*s.* per thousand. I saw great numbers of trees thriving on the quick moss, which is thus effected: Mr. Scott causes a round pit to be dug in the bog; this is filled with vegetable earth, or fertile clay; the plants being rooted in this, it needs no further care but that of keeping it from shaking, with that of occasionally pressing down the clay to the roots after high winds. Beech and oak succeed in this way, and even without clay or soil; ash and sycamore require a mixture of the soils. Larch, silver firs, alder, spruce, and birch, are intermingled with the other trees, in very promising and extensive plantations.

Since

Since the bog has been greatly cut away, and will soon be entirely succeeded by cultivation and enclosure, under the judicious management of Mr. Scott, we may expect to see one of the richest landscapes of our county, in surveying the champaign country, with the lake, from the heights of Campsay towards the outline of Innishowen, and the foreland of Benyevenagh.

What an addition, if, through all this tract, we had resident and enterprizing landlords? In this respect, Mr. Scott has shewn, that not only the gentleman, but the cottager, can ornament the country. Let every tenant be taught to plant some little clump around his dwelling, and that dwelling will not only be more comfortable within, but it will be seen with pleasure by the proprietor himself, when, returning from his marketing excursion, he reflects, that he too contributes to the endearing beauty of the landscape. At present, the flat before us requires much to be animated with breaks of tufted hamlets. What a valley would it be, if intersected even with the tree sallow or gargomel? The examples in Myroe, where these have been stuck down, fully illustrate this observation.

At Ballymagard, Mr. Hart has planted, and is meditating still greater plantations. The soil and aspect are favourable. Mr. Hart has a commodious dwelling. The view of the bay and point of Cul-

more

more is very fine at high water. This is seen to great effect from the bow windows of a very superb room, lately built by this hospitable country gentleman.

Sir George Hill is a very spirited planter. The rapidity, with which the demesne of Brook-hall has taken the lead of most other improvements, reflects credit on the zeal of the proprietor. The mansion is a modern edifice, lately finished on a very elegant plan. There are gardens and every thing else corresponding. Old trees intermingle with the new, and the prospect from the house, and other parts of the farms, is extremely fine.

Boom-hall, belonging to the Alexander family, is a spacious edifice; it commands fine views on either side. To the south lies the peninsula of Derry, with the view of the city and the spire, the bridge and the harbour; to the north is the entrance of the river and the bay of Culmore. Trees seem rather backward in some parts of this demesne; in other places, they come on much better.

Sir Andrew Ferguson has lately built a very commodious dwelling. Plantings, both by his father and himself, get on rapidly. The prospect is much the same as that of the other houses just noticed.

At Ivy is a neat lodge, with gardens and planting. Trees succeed well in other lodges and farms of this neighbourhood, particularly with Mr. Thomas Scott, (barrister)

(barrister) who has made exertions in improving, which are only intermitted on account of reasons hinted at in another part of this work.

Mr. Alex. Lecky has a neat dwelling, with suitable planting and accommodations. It is called Milton Lodge, and ends the catalogue of improvements on this side, except those of Mullenan and its neighbourhood, which are very creditable to the valuable farmers, who have set an unusually good example in this department.

In the immediate vicinity of the city, several gentlemen have gardens and other improvements. Mr. Lecky is in the first rank of these; his garden, near the Bluebell-hill, is a pleasant retreat. Mr. Darcus, also, has considerable zeal in gardening. The gardens belonging to the Bishop are spacious and well inclosed. The Casino is in an elegant taste, both as to architecture, and the chiaro-scuro embellishments within.

On the opposite bank of the Foyle, Mr. Knox possesses an excellent mansion-house, with a considerable decoration of planting. The view of Londonderry and its bridge appears hence to fine effect. There are good gardens, and other appropriate accommodations.

At Ashbrook, trees planted within my recollection, not above 14 years ago, are now of great growth. The glen abounds with timber of older

 date;

date; shrubs are intermixed along the pleasure walks. There is a neat house. The late proprietor went to much expence in additions. On the whole, Ashbrook is one of the prettiest spots in its vicinity.

Beech-hill has fine timber; the grounds below it swell finely. The house is convenient. Mr. Kennedy Skipton will not fail to embellish whatever is yet without ornament.

At a little distance up the Fahan, Mr. Smith has built on an elevated situation. Other exertions in gardening and planting are following in due course. Mrs. Thomson, at Ardhill, has a neat dwelling, with a garden, and some good trees.

Oaks, the neat lodge of Mr. Acheson, is a spot of singular beauty. The woods of Lord De Blaquiere have partly been saved from the hatchet by the good taste of Mr. Acheson. The windings, with the alternate rapids and levels of the Fahan, the jutting rocks, green banks, fringes of trees, natural and planted, the neat scenery of a well ordered garden, immediately contrasted by bold rocks and rugged outlines; all this is calculated to make the external of this mansion as captivating, as the inmates of it are estimable. Mr. Acheson is now building an excellent house, upon a most commodious plan, on the opposite bank, where he means shortly to reside.

The

The gardens and plantings of this are succeeding under the skilful management of the proprietor.

Mr. Waddy, of Lower Cumber, has some thriving trees.

Mr. Alex. Ogilby has lately begun to enclose and plant a screen, which may one day be an ornament to this naked country.

At Beaufort there is a dwelling, well situated, and some planting, the property of Mr. Ross, occupied by Mr. Ogilby.

Mr. James Ross, of Cumber, is one of those gentlemen in the linen trade, whose exertions have enabled him to benefit his native county. He is also an instance proving, that the ecclesiastical lands in this country, when a toties quoties lease can be obtained, are amongst the most encouraging.

To the number of acres, reclaimed from a rude state by this gentleman, we may add several others, under the character of screens and corner plantings, which do credit to the proprietor. Mr. Ross lives in a commodious dwelling, to which he is now making considerable additions.

Drumcovit is a gravelly district, favourable for planting. Mr. Hunter possesses here a neat dwelling-house, well sheltered by planting, both old and new.

The Messrs. Stevensons, around their neat habitations, have planted in the corner style, and have enclosed their farms with good quick fences.

The soils about Dungiven are eminently favourable to planting. The environs of Dungiven have lately been decorated by Mr. Leslie Ogilby.

At Mattsmount, Mr. Ogilby is extending and improving the former habitation, and, along with this, contributing many essential and ornamental improvements.

At Fort-william, Mr. Stephenson has much improved the air of a district, in itself among the finest of our county. His house and trees may be seen at great distances, and look remarkably well when viewed from Desartmartin.

At this place, the Rev. Mr. Magee has planted, and I had the satisfaction to learn from this very courteous gentleman, that not a single tree put down by him in the course of many years has gone back.

Mr. Canning, according to my information, is engaged in plantings, which amount to seven acres. There are, around the demesne, a number of venerable trees. Except immediately about this spot, there is no pleasing pasture. The mansion is situated very low; of course, it is rather gloomy.

At the Grove, belonging to Mr. Church, of Oatlands, there are some good trees; the house is small.

At Maghera, Mr. Soden has planted, in addition to the improvements of his predecessor; but the nature of the surface is unfavourable for displaying trees to good effect.

Mr.

Mr. Anthony Forrester has done a good deal, both as a planter and builder. His other improvements are among the foremost in this part of the county.

Orchards.

I think it may be generally observed, that orchards belong to the plantations where the English were settlers. The Scotch, perhaps, had not the examples so common at home, as to consider these sorts of improvements as of essential comfort in an early settlement. In order to appreciate this remark, let any person examine those parts of Armagh and Antrim, which have been colonized from England, compared with other places undertaken by the Scotch.

In the county of L. Derry, we have few orchards of an old standing. Even now, if we except those for the private uses of gentlemen, there are still very few. There have been some old orchards in Magilligan, where there was an English settlement, under the Gage family, but these are decayed.

Those, which contribute to the general supply, are small; there are three or four in my parish, from Ballycarton to Drumbane, which last is the best; it does not, perhaps, exceed 2½ acres. The trees were brought from Lisburn when three years old, and grafted;

grafted; they are about 24 feet distant from each other. Flags are placed beneath, to prevent the tap-roots from penetrating into the under soil, which is gravelly: the same precaution is in general use in every other soil.

The apples are of the following varieties.

1. Belly-fatten; a large baking winter apple, much lobed or striated in its surface.
2. Longford permain; well known.
3. Golden russet; ditto.
4. Lady's beauty; so called from its colours.
5. Lady's finger; from its shape.
6. Lemon pippen; well known elsewhere; scarce in L. Derry.
7. Wine-apple; from its dark red colour; not good.
8. Bergamo; summer, autumn, winter, and royal.

There are other orchards belonging to farmers; those at Derrybeg are the best, and evince the taste for improvements, which belongs to good tenures; these are perpetuities in the manor of Limavady. Mrs. M'Causland, of Streeve, has large orchards. Mr. Beresford has very productive apple-trees. Mr. M'Causland, of Daisy-hill, and Mr. Huey, of Newtown, have great enclosures of garden-orchards. The former gentleman has five, and the latter eight acres.

The

The fruit, usually found in these orchards, are plumbs, damascenes, &c. with the following apples, beside those already mentioned.

1. White russet; well known.
2. Brown ditto; ditto.
3. Tancred; a baking apple, called from its shape.
4. Tom chestnut; a small eating apple.
5. Gennetin; early.
6. Eve; ditto.
7. Fox's whelp; large red and white.
8. Codling; well known.
9. Kentish codling; a variety.
10. Non-pareil.
11. Clack-melon.
12. American nonsuch.
13. Madam Gorge.

Pears.

1. Jargonelle.
2. Autumn Bergamo.
3. Winter ditto.
4. Red Catharine.
5. Cressane.
6. Bonne Chrétienne.
7. Cuisse de dame.
8. Green Chizzle.
9. Stony pear.

All well known.

Observations.

Observations.

Trees planted at 20, 30, or even 40 feet asunder, appear too close to admit either good grass, clover, or grain beneath; they also impede the air, light, and heat, which are essential to the ripening of fruits. Besides this, trees planted, so close as 20 feet, very soon become ragged and fogged. If, on the contrary, the fruit trees, as in Normandy, were planted at greater distances, the cultivation of field crops would be very little impeded; especially if the standard was kept pruned to a good height, for the purpose of letting horses pass under. If 80 trees were planted on an Irish acre, this would give very little obstruction to the usual tillage; and allowing only 4*s.* per tree, the profit would be £.16, which would amply compensate the additional trouble of fencing, watching, &c.

Native Timber.

In Magilligan, among other varieties of fossil timber, are found very considerable quantities of yew, which proves this tree to have been indigenous in this part of the county. Fossil oak and firs are almost every

every where in our bogs, in great profusion, and even in the highest and most exposed situations. The names of places attest the quantity of timber, at early periods; as, in these instances, Drunagh, the field of black-thorn; Lisnaskiagh, the fort of the white-thorn; Druim-na-Derragh, the ridge with oak wood; Altagh-Derry, the glen with oak-woods, &c.

I have heard several old people affirm, that in parts, now entirely naked, their own fathers have seen the martin jumping from bough to bough; and that the woods extended 30 or 40 miles in several parts of the county. Many things contributed to the demolishing of native wood; 1st, the policy of having the country clear; 2d, the lavish waste of fuel; 3d, the exportation of staves, which were once the staple of Ireland; 4th, the demand for charcoal for smelting lead and iron, which were wrought to great extent in England at former periods.

The greatest plantation of forest trees, is that of Walworth. There are some few woods in other parts. At the Largay, the Rev. Mr. Wm. Hamilton is cutting down birch and hazle, which are sold for country uses.

Many of those glens and banks, which once were shaded with natural oaks, are now naked; and sorry am I to record the destruction, to which many more are inexorably doomed.

Among these, one of the most charming scenes of this, or any other county, is destined to the same

same fate. I mean the Ness, which is a waterfall of the Burn-Tolloght. This stream, having tumbled over many schist rocks, which confine its channel before this, at the Ness gives the finest waterfall in the county. The descent is, in perpendicular, about 60 feet. The rocks jut over as you stand below. Trees, especially native oaks, tuft these rocks, and fringe the opening of the vale; there is a level *hoam*, sufficiently expanded to form a lawn, and the rocky declivities, as they gradually widen, spread down their ornament of foliage to their bases.

I beg to be considered, as not attempting a description of this beautiful scenery. I give a poor, and, of necessity, a rapid sketch.

The banks of Ervay are also very finely wooded, and so are those on the opposite side. These are already assailed by the hatchet. Mr. Acheson has the merit of having saved some fine woods near his house; these he ransomed from devastation, as, I believe, he would do with others of those above mentioned, if some difficulties could be removed.

When one casts a sorrowful eye over this barbarous havock, perpetrated by those, who should rather adorn, than despoil, one is tempted to exclaim, in the impassioned language of Tasso,

L'un e l'altro sforza che le piante atterri,
E faccia al bosco inusitati oltraggi——
Prendete in guardia questa selva, e queste
Piante, che numerate a voi consegno!

Sect. 21.—*Prices of Timber.*

This is either foreign or native. The foreign is,

1. White oak.
2. Mahogany.
3. Walnut.
4. Fir from Norway.—Of these the prices vary, according to their scarcity and goodness.

— Deals, from £.16, 10*s.* to 12 guineas (war price) average, £.7 per hundred of 120 *lbs.*

— Logs, at from £.4, 10*s.* to £.7 per ton.

— Plank, double the price of deals, if 9 feet; if 12 feet by 9, and 3 inches, from 4*d.* to 6½*d.* per foot.

Native Timber.

1. Oak, white, the best, per cubic foot, 3*s.* to 3*s.* 9½*d.*; black something cheaper.
2. Ash, per cubic foot, 2*s.* to 3*s.* The best grows on gravel ground, the worst on moss; that on clay, reddish in the grain.
3. Grove fir, per cubic foot, from 1*s.* to 1*s.* 7½*d.*
4. Sycamore, per ditto ——— for turners, last-makers, and beetles of bleaching machinery.

5. Beech,

5. Beech, per ditto ——— reckoned superior to that of England, for nearly the same uses as the above.
6. Birch, sold by hand, according to scantling.
7. Alder, ditto, ditto.
8. Lime-tree, ditto, ditto.
9. Tree-sallow, gargomel salix, ditto, ditto.

Other sorts for hoops, per hundred.

Price of a common plough, ready for irons, 11*s.* 4½*d*

Price of a harrow—Of ash 4 sloats, 11*s.* 4½*d.*

5 bells, 30 iron tines.

Price of a spade by good workmen at home, 6*s.* 6*d.*

Of ditto, from England, 4*s.* 4*d.*

Storaer, 5*s.* 5*d.*—Collar, 3*s.* 3*d.*—Hames, 2*s.* 2*d.*

Wheel-car.

Wood, iron, workmanship complete, £.5, 13*s.* 9*d.*

Tackling of ditto, - - - - 11*s.* 4½*d.*

Slide-car.

Of oakling, 7*s.* 7*d.*—Of birch, alder, or sallow, 4*s.* 4*d.*—Tackling of ditto, 5*s.* 5d.

Turf-

Turf-barrow.

Of ash branches, 4*s.* 4*d.*—better sort, 6*s.* 6*d.*

Stable, yard, or garden barrow, 11*s.* 4½*d.*, or of a better sort, 16*s.* 3*d.*

Deal hand-barrow, 3*s.* 3*d.*—ash, 5*s.* 5*d.*

Inferior kinds of ploughs, harrows, &c. made of soft wood, are sold in markets, in the proper season, at very cheap rates. Thus a birch plough sells at 6*s.* 6*d.*—a birch harrow, with rungs instead of sloats, at the same.

Straddle and pins, 1*s.* 1*d.*

Brehem, 1*s.* 1*d.*

Hames and tuggs, 1*s.* 1*d.*

Creet, 2*s.* 2*d.*

SECT. 22.—23.—*Bogs, Wastes, high Mountains.*

The map will best display the extent of these, by referring to the colours, as explained in the margin.

Without the slightest intention of disrespect, I must suggest to the re-consideration of Dr. Beaufort, that Londonderry is a county, of which, by far, the greatest

greatest portion is mountain; and that, for the most part, of the rudest character. Few things manifest the advantage of county surveys, more than the perception of the local mistakes, to which even the most learned and acute minds must be liable, merely for want of local information.

Thus, the accurate and ingenious Dr. Beaufort has been induced to state, that "this county is not *much encumbered with mountains.* Benyevenagh, in the north, Sliabh-gallen, in the south, and Cairn-togher, which *extends into Tyrone*, are all that claim our notice. In the last mentioned mountain all the rivers of this county have their source, except the Bann and the Foyle," &c. May I request the freedom of referring the learned author, with my other readers, to the map, which accompanies this work? I can answer for its accuracy.

In the same way, Dr. Hamilton, who has certainly the merit of being the pioneer to subsequent naturalists, hurried, no doubt, in *his excursions*, has traced the boundary of the white lime-stone and basalt to the east of Sliabh-gallen, although nothing less than a cloud could have obscured those very prominent and conspicuous features of that mountain.

SECT. 24.—*Whether reclaimable, and how?*

THERE is a great extent of moss between Maghera and Castle-Dawson, more than necessary, at present, for fuel. This flat is very reclaimable for meadow and other sorts of culture, by the usual process of draining, paring, burning, and covering with compost.

The same may be said of all the other flats along the Bann; even where lime cannot be had, ashes can be supplied by the burning of their own surfaces. Few peat-mosses are so deep, as to be out of reach of the clay, which is the general subsoil of all low flats, and seems to have been stratified there, before the moss, growing out of the decay of coarse and aquatic plants, was accumulated. Even among rocky surfaces, either of schist or basalt, where the moss is deepest, the clayey deposits have been detained, even on the declivities of high mountains.

But in high situations, independent of climature, the soil, under the moss, has become poor, by the never ceasing loss of their clay with lime and other soluble and, therefore, fertilizing materials, which are carried downward by the action of water. Even, when in high climatures, we find rich dells and verdant hoams, as if by enchantment, along the mountain

mountain streamlets; we can easily trace the cause of their fertility, by adverting to the still higher regions, of whose upland spoil they have been made the depository.

As to those peat mosses, which succeed each other, with only the interval of bad and rocky heights, through the interior of this district; in situations, where they are not of use to the bleach-green, or to the inhabitants for fuel, I venture to suggest, that the deep levels of moss would become a more valuable arable, than most other soils in that district, and that the rocky knolls might be advantageously covered with hardy trees.

In the high mountains, on examining attentively the vertical section of a new cut bog, I could almost count the number of annual deposits from the coarse vegetables. These are preserved on account of their strong texture, their tanning matter, and by not being the food of animals. One could also enumerate the various vegetables, which enter into the composition of each bog. These things are much more observable in the hard mosses of mountains, than in the low marshy bogs; the latter having surfaces rendered unequal by tufts, or tummocks, and being poached often by the feet of cattle. It is now admitted generally, contrary to the theory of Mr. Anderson, that peat-moss is the decayed accumulation, and not the living growth of vegetable

vegetable matter. The tanning quality preserves the former deposit, and, with it, all matters accidentally strewed along, and, in time, overheaped.

The continuation of the fibrous texture is caused by the shoots of the successive year, arising through and from the undecayed materials of the preceding. Not only the heath-bark, but the vast quantities of tormentil, which abound in bogs, must contribute to their conservation. This plant is so powerful an astringent, that antiently it was used to tan leather in Ireland. Perhaps the profusion of tormentil, which now grows useless in the worst of surfaces, may one day be found of utility in the arts.

To decompose bog, is alone sufficient for the production of the finer plants. It is, therefore, an inert, but inexhaustible dunghill. Its value is yet but little known in Ireland, where it abounds, under the character of waste, even in good climatures.

In many parts of the county, I observed gravel swells, covered a few inches deep with peat and ling. These are dry, and, if merely turned in with a plough, would carry plants for the browsing of sheep, an animal now likely to be exiled from almost every other arable patch in the county.

Another species of improvement, greatly required, is that of draining and enclosing those tracts of low and wet bottoms, which at present, under the description of *rough outsport*, are poached all

all winter by the hoof, and consequently, in summer, yield little to the bite of cattle.

It may seem odd to include under this head lands, which yield, in their present state, from four to five guineas per acre. Such is that vast flat of coarse meadow, which extends along the Roe river, on the side of Aghanloo. This fine flat was, about 40 years ago, the refuge of wild geese; a few drains, with a bad embankment, and a single sluice, are all yet bestowed on it by the several townships, through which it passes. The meadows are composed, in many parts, almost exclusively of the worst plants already named; nevertheless, though grazed on nine months, and left to grow but three months in the year, the crop, on the foot, is sold at the above mentioned price. If such a tract were in the hands of a farmer, like the Rev. Mr. M'Causland, what would it not yield, instead of having its surface defiled, as at present, with sprit, rush, yellow rattle, and flags?

Under the character of wastes, there is none more deserving the attention of an enterprizing reclaimer, than the ouzey flats, which extend from the mouth of the Fahan to that of the Roe; the length may be about seven miles; its breadth, from the inner banks, at present covered with herbage, to where it lies bare in common tides at low-water, is in some places not less than three miles. It extends, principally

cipally below the manor of Limavady, Walworth, the church-lands of Fahan-vale, part of the manor of Muff, and the freehold of Donneybruin.

Nature seems to be in process, however tardy, to make this a second Myroe. In the memory of man, the mud is raised, and consequently the force of water proportionably lessened. The growth of wrack (or fucus) has commenced in some places. The bank is carpeted with the spreading sward of agrostis maritima, or little sea bent-grass. This plant, though diminutive, is sweet pasture; it also possesses a notable property of bearing to be transplanted, and even of extending itself within the tide. I take it to be one very useful agent employed in the progress of nature, to advance and retain her vegetable empire, and have seen the experiment succeed on the coast of Myroe; the transplanting was done by Mr. Martin, to save the interior bank from mouldering by raising a second.

Lest I should appear too speculative, I refer the reader on this subject to the Transactions of the Dublin Society, Vol. 1. Part 1.

SECT. 25. 26.

Habits, Maxims, Manners, Customs, and Character of the People.

" Humani nihil a me alienum puto."
" The proper study for mankind is man."

The people of the county of Derry, like those of Down and Antrim, afford a striking contrast to those of the more southern counties. Much of this superiority is to be attributed, among other inestimable benefits, to the staple manufacture; particularly so with regard to females. Employments exercised within doors, however they may take away from the robust structure of the man, conduce greatly to the good appearance of women.

Whoever compares the appearance of a dissenting congregation, in the county of Derry, with that of any other congregation in counties, where there is no such manufacture, will at once assent to the justness of this remark.

As to the courtesy of both sexes, it is remarkably in their favour. When you enter a house, though the family be seated on low stools, some one is instantly desired " *to fetch down a chair*" from the inner

inner apartment. This apartment, in other instances, is so far considered the place of reception, that, even in cold weather, the visitant is desired to *walk up* to the room, though perhaps without either fire or fire-place. The terms *up* and *down* have no reference to stairs, for all the houses are but of one story. The inhabitants are early risers in summer; I have known three turns of turf, from a distance of three miles, brought with slide cars, where the ascent and descent is little less than perpendicular, in one day, in the summer months.

In the winter time, they sit up proportionally late. A great deal of domestic economy, particularly spinning, goes on till past midnight, at the light of a small piece of bog-fir, called a split. This is managed with great care, and very often brought from ten miles distance for the purpose.

There is a remarkable vein of piety pervading all their phrases. For example, no orderly person says positively, "I will do this or that," but qualifies his intention by adding, "With the help of God,"—"Please the Almighty,"—"If I be spared,"—"If it be the Lord's will,"—or some such expression. There is also a strong turn towards predestinarian doctrines, particularly among the Seceders. They talk much of the *second means*. In many cases, however, they seem to give little faith to *human sagacity;* and, for this reason, rather than for want of affection,

affection, they sometimes leave each other superstitiously to the will of God, instead of obeying the true dictates of religion, in applying for medicine or advice.

And thus it happens, that, however charitable and affectionate their natures, there seems to be a great remissness, or rather stupor, in the instances when the friends or family are diseased. The sick person is allowed to remain without attendance, even for the essential and obvious functions of the primary passages. I have known children, in worm fevers, kept close to the fire in smoak, stretched on a pallet, without evacuation for four days. In fevers also, the patient is crouded by idle visitors, stifling the hut, and preventing his repose; even in the height of his disease, the inflammation is encreased by prescriptions of whiskey, to *drive the disease* from the *heart;* for it is very certain, when any one ails, that nothing can be sick but the *heart;* "*it is all about the heart.*" The specific is *whiskey*, either to keep it *off the heart*, or *strike it out from the heart.* Every one knows, that an Irishman's *heart* is in his *mouth;* henceforth I hope it will be believed, that the *heart* occupies his *whole interior.*

Tobacco also is reckoned so essential to health, that many a poor and hungry labourer prefers a *quid* or a *smoke*, without a dinner, to a dinner without a *quid* or a *smoke.* The beggars also, with starving children,

children, relying on your sympathy in this respect, think it adviseable to ask for "*a penny to buy tobacco*," rather than to buy bread.

I have observed also, that the character of my good countrymen is not without its share of superstition; for instance, in certain circumstances, the cow is said to be *elf-shot*, in which case, salt and water poured on three halfpence, and a fairy's bullet (that is, the petrified sea-urchin, found common in limestone) are an infallible remedy.

By the way I must mention, that Christian and human being are synonimous; for instance, it is said, "he is neither a beast nor a *Christian*." Certain old women pretend to tell of robberies by turning a sieve. I have known people go several miles to enquire of the oracle, but never could learn of their being wiser.

The weazle, (provincially *whitrick*) is reckoned *sawney* about a house; perhaps, its fondness for eggs is balanced by its enmity to rats.

There is a superstitious belief that, if a cow dies in the calving, her flesh should be eaten by *Christians*, and not by *dogs*; otherwise no other cow in the same *biar* will thrive. Near a poor hamlet, in the Ballymullans, I saw a very hideous instance of this; the poor people were busy in salting the carrion of a lean cow. No doubt, this revolting custom has been sanctioned, at some remote period, for wise purposes,

purposes, in times of scarcity. I wish it was now discontinued.

The Scythian custom of feeding on blood has something like a revival in the mountains of this country. I actually surprized the wretched inmates of a poor herdman's house, on one of my rambles through unfrequented parts; five children, with the father and mother, were eating blood, thickened by boiling, but without any addition. It was in the year 1800, when the people were nearly starving. God grant, I may never again witness so overcoming a spectacle!

If you praise your neighbour's cow, she is *in danger* of the *blink of an ill eye*, unless *you wish him luck of her;* for the same reason they say, "*that is a fine horse, God bless him!*" Bees must not be given away, but sold; otherwise neither the giver nor the taker will have *luck*. A strange dog or cat coming to your house, is an omen of good fortune. The same thing is true of the first coming of the crickets. It is observable, that the poorest Irishman, who cannot feed a pig, will yet keep a dog, which is frequently a tormenting, and sometimes a fatal nuisance to the passenger. Is it, that he consoles himself by receiving the caresses of an animal, which is his only subject, and which defies all the world beside?

Such

Such are the difficulties of providing for offspring, that mothers in the poorer, and even in the better conditions of life, endeavour to suckle their children for three or four years. In the yarn market of Coleraine, I once heard a boy four years old call out to his mother, to sit down and give him a suck.

There is a great repugnance to taking an oath, even in judicial cases, especially among the Seceders. On this account, the legislature has indulged them, by admitting their testimony on asseveration with uplifted hand.

At the Scotch weddings, the groom and his party vie with the other youngsters, who shall gallop first to the house of the bride; nor is this feat of gallantry always without danger, for in every village, through which they are expected, they are received with shots of pistols and guns; these discharges, intended to honour the parties, sometimes promote their disgrace, if to be tumbled in the dirt on such an occasion can be called a dishonour. At the bride's house is prepared a bowl of *broth*, to be the reward of the victor in the race, which race is therefore called the running for the *brose*.

The Irish wedding is somewhat different, especially in the mountainous districts. However suitable the match, it is but a lame exploit, and even an affront, if the groom does not first run away with the bride. After a few days carousal among the groom's

groom's friends, the *weddingers* move towards the bride's country, on which occasion, not only every relative, but every poor fellow, who aspires to be the *well-wisher* of either party, doth bring with him *a bottle of whiskey*, or the price of a bottle, to the rendezvous. After this second edition of matrimonial hilarity, the bride and groom proceed quietly to their designed home, and forgetting all at once their romantic frolic, settle quietly down to the ordinary occupations of life.

Tokens of Weather observed by the Farmers.

" Possum multa tibi veterum praecepta referre."

When geese fly violently about, a storm of wind is expected.

When the ducks wash and dive in the ponds, it is a sign of rain.

When the dog eats *couch-grass*, (avena elatior) or when his bowels give a guggling noise, wet weather is expected.

When the gulls fly inland, it is a sign of hard weather.

When the barnacle flies from Lough Foyle to Lough Neagh, it is a sign of an alteration in the weather.

The

The *weather-blate*, or snipe, flying high in a calm night, is a good sign, especially if the male and female call and answer with vivacity.

Whitish misty clouds in the south predict heavy rains; dark clouds, with a silvery border, in summer, denote thunder; cat's hair, or *goat's hair*, which is the electric shooting of the clouds, denotes wind; sometimes, after a long drought, it is called *a hardening of the drought*. The clouds descending to the mountain sides denote wet; ascending, they foretell drought. Clouds, *coddled* or flaked with a grayish light, denote dark settled weather. The roaring of the sea on the *Tons*, in the mouth of the harbour, denote a storm of wind and rain. The rooks going home at night in thick ranks, with a melancholy noise, forewarn against bad weather. Dark weather, at the full of the moon, is observed as a favourable omen.

I have often heard it asserted, that the time of tide has an effect on the conception of some animals; it is believed, for instance, that if one cow admits the male at *full* tide, and another at *low* water on the same day, the latter will bring forth eight or ten days sooner than the former.

Between the end of March and beginning of April there are certain days, called borrowing days. The meaning is, that March, when he fails in doing sufficient damage, borrows from April for that purpose; the

the old style continues still to be observed in all our rural calculations.

Virgil's husbandman prayed for moist summers and dry winters. Our farmers most particularly desire a dry May and a *leaky* June. On this subject there is a rhyming proverb, and I love to record these verdicts of rural experience.

"The farmer in May
"Comes weeping away;
"He goes back in June,
"And changes his tune."

The meaning of which is, that May is generally a cold month, and the corn only lying down to *stool;* but in June, being refreshed by warm showers, it begins to rise off the *stool*, or, in other words, to push forth its stem-shoots; after which it appears more promising.

SECT. 26.—*Use of the English Language.*

With regard to language, the Irish is now little spoken, except in the mountainous and retired parts. In the low country, something like the Scotch dialect is spoken, but whether this dialect may be called *English*, I shall not decide. Much as I esteem my countrymen,

countrymen, I cannot flatter them by reporting their mode of speech, as perfectly reconcileable to the principles either of melody or grammar.

Among their phrases, some are defective, and others extremely pithy, or significant. Thus it is usual, that when you ask, "What news?" the reply is, "nothing *strange*, but what's *common*." On the other hand, when a farmer has substance joined to industry, he is said "*to have a way in him.*" Is not this a metaphor of nautical experience?

I shall not dwell longer on these topics, though I must avow my opinion, that nothing can be more interesting to the moral or natural historian.

Sect. 27.—*Antiquities.*

In treating of this subject, I shall endeavour not to dilate too much, beyond the scope of this work; whilst, at the same time, I must think myself bound not to pass over, in a manner too cursory, the topics of research, which may interest the curious in general, and, in particular, those connected with this county.

The name of Derry is derived, by corrupting the Celtic term *Daire*, that is, an oak wood. Originally the district, designated under the name of *Dair-calquie*, or *Dair-coillragh*, that is, the country of oaks, comprehended

comprehended not only the present city and county of Londonderry, but also a considerable part of the county of Donegal, situated along the west banks of the Foyle. The inhabitants of this territory were the Darnii of Ptolemy.

The antient chieftains of the western bank, including the peninsula of Innishowen, were called Hy-daher-teagh, that is, Chiefs of the habitations of the oaks; this name is now spelled and pronounced, O'Dogherty. The sept of this name were, at an early period, expelled from the southern parts of the county of Donegal (Dun-eir-gall), by the O'Donnels and O'Connors.

On the eastern side of the Foyle, extending to the Bann, which was originally denominated Kenaght Cathanaght, or the territory of O'Cahan, the principal families were the O'Kanes (Ky-cathan), who were a branch and feudatories of O'Neil. The principal residence of the chief, O'Cahan, or O'Kane, was at the beautiful range on the bank of the Roe, now called the Deer-park; the site is well known, and even the ruins of the strongly posted castle were lately discernible; it was on the jut of a perpendicular rock, hanging over the river, and near 100 feet high. On the land-side, the defence consisted of a moat; the terrace, orchards, and pleasure grounds may yet be traced.

"In yonder copse, where once the garden smil'd,
"And still where many a garden flow'r grows wild."

The

The whole scenery of this spot is delightful, and among the rest, the cascade, called the dog's-leap, is extremely worthy of the pencil. It is from this spot, that the village takes its name, *Limnavady* signifying, the leap of the dog.

Respecting the last noted personages of this now forgotten family, here is a curious and well authenticated anecdote.

"The Duchess of Buckingham, being then, after her first widowhood, married to the Earl of Antrim, had raised 1000 men among her lord's yeomanry in the county of Antrim, in aid of King Charles the First. The deputy, Lord Wentworth, had directed her Grace to have these recruits marched by the route of Limavady. In passing through this village, curiosity induced her Grace to visit the wife of O'Cahan, whose castle had been demolished, and himself banished. In the midst of this half-ruined edifice, was kindled a fire of branches. The window casements were stuffed with straw, to keep off the rigours of the season. Thus lodged the aged wife of O'Cahan; she was found, by her noble visitant, sitting on her bent hams in the smoak, and wrapt in a blanket."

It appears, that O'Cahan was implicated in the rebellion of Tyrone and his accomplices. Montgomery, Bishop of Derry, relates a story of O'Cahan having offered his services, to detect some lands belonging

longing to the see, which Tyrone had got into his hands; and that, in consequence of a process to make his appearance at the Castle of Dublin, at the bishop's suit in this affair, Tyrone began to suspect, that O'Cahan, who was privy to the plan for a general insurrection of Ulster, had betrayed him; on which suspicion O'Neil fled, an. 1607.

O'Cahan, being himself seized, forfeited his estates. "But the king and council wrote leniently to the deputy to bring him to conformity, by shaking the rod over him." This letter is dated January, 1607. Yet, in another, dated November following, they say, "But for O'Cahan, whom we find you have imprisoned, we like the course you have taken with him and allow also very well of your placing his son in the college." What became of this son, does not appear. Several of the family, at the planting of the county, were, partly, restored to their properties, and settled quietly among the other native freeholders.

As to the ecclesiastical records of Derry, we find those of St. Columb-kill among the most early. This remarkable person was born in 521, at Gartin, in the county of Donegal, of noble extraction, of the house of O'Neil. His relatives, of the noble family of Kenell Connell, from whom the county was named Tyr-connell, granted the district of Derry, on the Foyle, to St. Columb.

As

As the patron and founder of the most antient religious houses in this county, I cannot omit to mention a few particulars of his history. To distinguish him from many other saints of the same name, (Columba) he is usually surnamed Columb-kill. This term, in Irish, *Coil*, signifies a religious place of worship; from the number of these, founded by himself, he was honoured with this epithet. Whoever wishes to enquire further, respecting the life of this extraordinary person, may consult the Lives of the Saints, the Hibernia Dominicana, Dr. Coyle's Collectanea Sacra, &c.

On his quitting Derry for Scotland, he composed the following verses, translated by the above author:

My fragrant bank and fruitful trees farewell,
Where pensive mortals, mixed with angels, dwell:
Here angels shall enjoy my sacred cell,
My sloe, my nut, mine apple, and my well!

It seems to be agreed that, in the year 565, Brideus, a powerful chief of the Picts, gave St. Columb the little island of Hy, or Iona, which, from him, was called Hy-colm-cille. In this he erected a monastery famous, in after ages, as a seminary of learning, and a burying-place of Saints and Kings. His own body was the first buried in Iona, anno 597, in the 77th year of his age. It was afterwards

removed to Down, and there laid in the same vault with those of St. Patrick and St. Bridget.

In the year 546, the first abbey was founded in Derry by St. Columb; after which epocha, our chronology is as follows:

597. The cathedral of Ardstra translated, first to Maghera.

783. The abbey and town of Derry, destroyed by fire.

812. The Danes burned them, and massacred the students and clergy.

832. The Danes were driven from the siege of Derry, with incredible slaughter, by Niell Calnè, monarch of Ireland, and Murchad, prince of Aileagh.*

985. Maol-Leachline†, a Dane, carried away the shrine of St. Columb.

989. In

* This territory is now called Ely. The ruin of the castle is yet visible on the right, as you go from Derry to Fahan. It was one of the three great and royal palaces of Ulster, famed for important councils and convocations. See Dr. Coyle's Collectanea.

† Note by General Vallancey.

Maol, a servant. It is always applied to religious servants. Coptic, *Mahal, or Mial,* ingeniculo. Arab. *Malik* and *Memalik* servants. *Maoulasii,* in Persian, properly signifies an associate; it is the name of a particular sect of Dervises. Ch. עמל *Amal,* laboravit.

" Cois-

989. In each of these years, Derry was wasted by
991. the Danes.
996.

1095. The abbey consumed by fire.

1100. Murchertach O'Brien, prince of Munster, attacked Derry with a large fleet of foreigners, who were defeated, but the town was pillaged.

1121. Domhnal, prince of Tyrconnel, resigned his kingdom, and retired to this monastery, where he died.

1124. Ardgar, prince of Aileach, was slain in an assault on Derry.

1134. The town was burned and plundered by the people of Munster; and next year, to revenge the death of Ardgar, the town, and all the sacred edifices, were consumed by fire.

1150. Abbot Flathlertach O'Brolchain made a visitation through the county of Tyrone,

" Cois-maol, a sacred or consecrated servant. Hence the Casmillus of the Romans.

" O'Brien derives Maol, from Maolagh, bald. Ch. מלג, *Melag*, depilare, evellere pilos. Metaphoricè facultatis depilatio—whence the Irish Maolageantach, dull-witted, stupid, in which he has misled Shaw. Maol, a servant, a shaved person, devoted to some religious order."

It is probable, that this Dane had been a devoted servant to the church, which he robbed.

then called Cinel-eogain, and received from Murchertach Hya-Lochluinn, king of Ireland, 20 oxen, together with the king's own horse, and a gold ring, which weighed 5 ounces; and from every nobleman he received one horse; from every two burgesses an ox; one from each free person, and one from every four of the rest of the people. This liberal contribution was to repair the abbey. The following year, the abbot made another visitation through Siol-cathasaich; from Cuculad O'Flan, prince of that country, he received a horse, with a gold ring weighing 2 ounces; from every nobleman a horse, and a sheep from each master of a family.

1158. The episcopal seat, which had originally been at Ardstra, on the river Derg, and afterwards translated to Maghera, was by a synodical decree removed to Derry. Flathlertach O'Brolchain, who had presided over the abbey of St. Columb, is consecrated first bishop.

1161. The same abbot collected, from the country of Ossory, 420 ounces of pure silver.

1162. The buildings, which crouded the abbey, were removed by Murchertach Hya-Lochluinn, and the abbot Flathbert erected the stone,

stone, called Cassiol Anarlair, or the rock of tribute.

1162. (Annals of Boyle, anon.) The houses of Derry were sundered from the churches, by the comharb of Columb-kil, and by the king of Ireland, Murtogh O'Neil. Eighty houses or more were built, and the wall of Erlar * was made by the † comharb of Columb-kil, with a curse to him that would ever come over it.

1164. The cathedral erected under the care of the above-named person, and by the assistance of Maurice M'Loghlin, king of Ireland. It was on an extensive plan, as appears from its being termed, in the annals of Ulster, "THE GREAT CHURCH OF DERRY."

* The stone of tribute—Earalach, signifies caution, perhaps from the above curse or caution.

† Note by General Vallancey.

"Arba, Arbha, (Arva) a vicar, a priest. Comh-arba, a partner in church lands, a successor.

"Arabic, عراف *Araf*, a priest, augur, physician, deputy, the next in rank to a commander, or chief judge &c. شارف *Sharif*, and شرفا *Shurfa*, and اشرف *Ashruf*, a chief. شريف *Shereef*, a chief."

1166. About

1166. About this period, Gervaise O'Cherballan, the bishop of Derry, possessed himself by force of part of the see of Clogher, the bishop of which was paralytic. He next stripped Raphoe in the same manner. This augmentation of the diocese remains to this day.

The late Dr. Coyle, titular bishop of Raphoe, protests against the spiritual right of the titular bishop of L. Derry in the barony of Innishowen. (Collect. sac. vol. i. p. 64.)

Rory O'Morna burned the town, with the church Duibh-regles, *i. e.* the abbey church of St. Columb.

1170. The town was accidentally consumed by fire.

1175. Donogh O'Carillan perfected a treaty of friendship with the abbey and town, and granted to the abbey a betagh town-land near Donaghmore, and certain duties.*.

1180. The gate of the refectory in Duibh-regles was erected by O'Cathan of the Krieve, and the daughter of O'Nonorge.

1195. The abbey was plundered by Rughruidhe and the English; these were afterwards cut to pieces at Armagh.

1196. The son of Murchertach, king of Ireland, treacherously killed by Dunchad O'Cathan

* This is an impropriation in the Spence family, above Lifford.

O'Cathan was buried in the abbey with great pomp. The altar of the great church was robbed by M'Cienaght of 314 cups, the best of their kind in Ireland; these were recovered, and the thief was hanged.

1197. Rotsell Pitun came to attack Derry; but, through the assistance of the Saints Columb and Canneck, was overcome by the O'Neils, near Nuachonbail.

1203. The town was consumed by fire, from the sanctuary of St. Martin to Adamnanan's well.

1211. It was plundered by Thomas M'Oughtry, with the M'Rannels.

1218. An abbey for nuns of the Cistertian order was founded by Turlogh Lunigh O'Neil, of Strabane.

1250. The upper end of the great church fell.

1274. A Dominican friary erected by O'Donnel the younger, prince of Tyrconnel, containing 150 friars, which was situated in the north of the city. Whatever vestige might have existed before the siege in 1688, it is now obliterated, and its endowment granted to the London company. It also was celebrated, and sent forth two bishops and five martyrs.

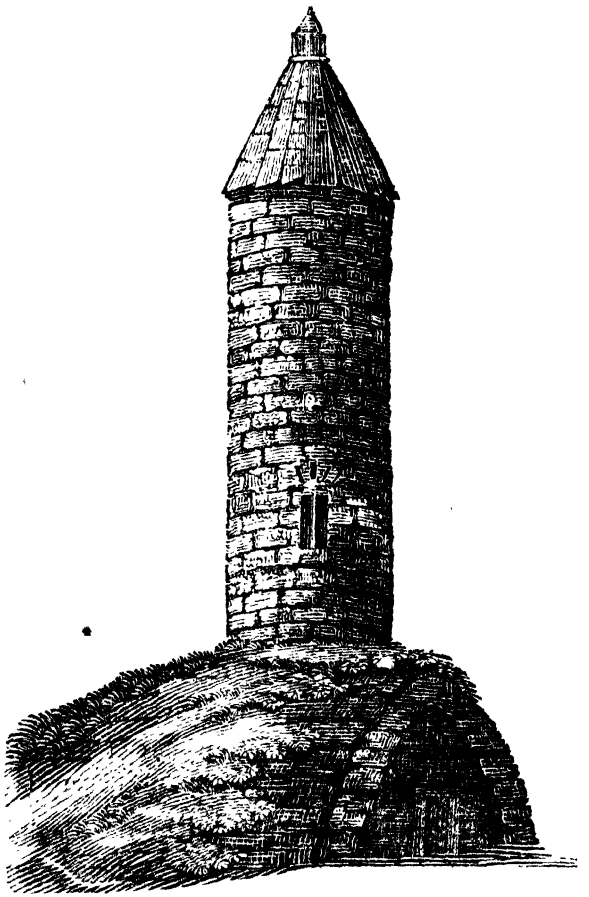
Some

Some traces, however, of the monastery were, in my memory, discernible, and the well is called St. Columb-kill's well to this day, 1802. Probably, the Catholic chapel, and thence to the Bishop's garden, is the site of this famous convent. I present the reader with a view of the tower, once belonging to the monastery, but now converted into an ice-house.

View

View of the Tower, which belonged to the Monastery, founded by Columb-kill, commonly called,

THE LONG TOWER.



The

The site of the magazine is said by some to have belonged to one of the religious houses; and, by others, the building is supposed to have been a military erection in the time of queen Elizabeth.

It is said, the Franciscans also had a monastery in Derry.

I now proceed to the civil records of Londonderry.

1515. New charter granted to the company of Londoners, and a gilt sword sent by them to the mayor, with direction to name the county, formerly called of Coleraine, thenceforth that of Londonderry; the city to have the same title.

1531. Sir Odo O'Donnel, lord of Tyrconnel, being prevented by sickness from personally renewing the oath of allegiance, appointed the abbot Conaght O'Frigil, of Derry, to perform it before Lord Deputy Skeffington at Tredagh.

1565. Sir Henry Sidney appointed viceroy; an encampment is made near L. Derry, under the command of Edward Randolph, an experienced officer, who arrives in the river Foyle, with seven companies of foot and one troop of horse, to repress O'Neil, who had renounced allegiance to the English power during many years. A bloody engagement

gagement takes place; the Irish chieftain is defeated; but the English commander is slain shortly after.

The gunpowder, which had been deposited in the church of Derry, blew up with great damage to the garrison. O'Neil meditates a renewed attack, but is assassinated by his own people.

1595. The Earl of Tyrone revolting gains the battle of Blackwater; sues for pardon and receives it in 1603; is received with honour at the court of England, on the accession of James; is suspected of revolting again, in concert with O'Cathan and O'Donnel.

1599. Essex, appointed Governor of Ireland, is charged to fortify and garrison Derry, which, from its situation, its neighbourhood to the harbour, and from the friendship of O'Dogherty, chief of Innishowen, had been long decided on as essential to the English interest, by keeping divided and in check the powers of O'Neil and O'Donnel; this commission is neglected by Essex.

1600. Lord Mountjoy succeeding, sends Sir Henry Dockra to fortify Derry, whom he supports by various military movements against O'Neil.

1600. The

1600. The fort of Culmore built.

1601. Innishowen, by the submission of O'Dogherty, is made obedient to the English power.

1602. The fortress of Derry betrayed to the Irish by their countrymen in the pay of the English; it is retaken, and the insurgents re-

Sir Henry Dockra receives intelligence of the Spanish armada, at Derry, from an Irish chief, by which means the English were prepared against the invasion.

At the invitation of Sir Henry Dockra, a number of colonists repair to Derry, which becomes not only an asylum to the English, but a resort for education to the natives.

1607. The Earls fly; the six counties of Ulster escheated; project for the division and plantation of these, 12th. James.—*See Appendix.*

1608. Sir Cahir O'Dogherty, the young chief of Innishowen, having invited Hart, the governor of Culmore, with his lady, to an entertainment at his castle, suddenly seizes his guest, and threatens him with death, unless he would give up the keys of the fort. This being rejected by Hart, his wife is prevailed on, to save her husband's life,

to

to give such tokens, as succeeded in procuring admission to the Irish, who seized the fort after a resistance, in which the brother of Hart's wife, who commanded, with all the garrison, were slain. Immediately after this success, L. Derry is surprized by O'Dogherty, Sir George Paulet, with his soldiers, losing their lives in its defence; the inhabitants, who could escape, fly; the town is burned by O'Dogherty.

Orders and conditions issued, to be observed by the undertakers upon the distribution and plantation of the escheated lands.—*See Appendix.*

1610. Commission for enquiring into the king's title to the forfeited lands, (7th of James 1st.) with articles of instruction to the commissioners.—*See Appendix.*

1613. A survey made, and the committee for building the city of L. Derry rebuked.

1614. 11th of James 1st. Commission returned into the rolls office.

The walls of L. Derry built.

1618. The county surveyed by Nicholas Pynnar,
1619. Esq.—*See Appendix.*

1625. Orders from the Privy Council to sequester the rents of the company of Londoners;

not

not carried into execution; taken off in 1627.

1626. Sir Thomas Phillips, Governor of the county, complains to the King, (Charles 1st.) respecting the management of the 3000 acres annexed to Coleraine, and the 4000 acres annexed to L. Derry.

1628. A new sequestration again dissolved.

1629. Sir T. Phillips complains to the King.—*See Appendix.*

1633. The new cathedral erected, under the inspection of Sir John Vaughan.

1636. Suit in Star-chamber; judgment given against the company; their estates sequestered.

1637. Sir Thomas Totherby and Sir Ralph Whitfield empowered by the Crown to let leases.

1640. The Parliament annul these proceedings, yet the company did not immediately recover their possession.

1641. L. Derry is besieged by the English and Scottish, in the name of the King, against the Irish.

The rebels, under Sir Phelim O'Neil, get possession of almost all Ulster, except the city of Londonderry, the town of Coleraine, and the castle of Enniskillen. Mr. Robert Wolbank, from the North, informed the parliament

parliament, that 200 of the people of Coleraine had defeated 1000 of the insurgents. Mr. Conway, of Ballyaghie, is obliged to surrender his castle, with liberty to retire with his effects, which the Irish let pass without notation of faith.

In the rebellion of this date, very little of this county was forfeited, as appears from the Down survey. In the parish of Aghanloo, only the town land of Ballycarton, belonging to O'Magilligan, was forfeited.

1649. L. Derry again besieged, and held for the Parliament by Sir Charles Coote and General Monk.

1655. The London company reinstated in their possessions.

1662. King Charles 2nd. granted a new charter.

1678. George Farquhar, the poet, son of a clergyman, born this year in L. Derry.

1688. L. Derry again besieged in December.

December 7th. The apprentice boys of L. Derry shut the gates against the advanced guard of the Irish army. Whoever wishes to read the interesting account of this siege, with the hardships sustained by the gallant defenders, may consult Walker's diary, Dalrymple's account, or M'Kenzie's narrative.

tive. For the names of the persons chiefly instrumental to the preservation of the city, and consequently of the kingdom, let the reader consult the Appendix.

1689. L. Derry relieved in August.

1692. The exchange built by Sir Thomas Neville.

1703. Ten Presbyterian aldermen and twelve burgesses refuse to qualify, according to the act of conformity, and resign their offices. The Attorney General, Rochfort, wishes them to go out one by one, lest the charter should lapse for want of having a perpetual succession of the competent numbers complete; this they refuse, which occasions the necessity of an act.

1721. The military commander, angry at the resolute conduct of the corporation, refuses to send the keys of the city, which he was bound to do according to the charter, to the new mayor. When the members of the corporation came to the town-hall to put on their gowns, he surrounded the market-place with troops, and thus impeded the entrance of the corporation; shortly after this the commander was removed.

1788. December 7th, a grand centenary commemoration of the shutting of the gates, during which

which a frigate, decorated for the occasion, sails up the river, and moors at the quay; the commander, Captain Brabazon. An elegant sermon preached on the occasion by the Dean of Derry.

1789. A second commemoration of the opening of the gates; a sermon on the occasion by the Rev. G. V. Sampson; the first stone of the triumphal arch laid by the mayor, Thomas Bateson, Esq.

I shall now proceed to offer some of the ecclesiastical antiquities of Coleraine, as being next in importance.

The etymology of this name is either *Cuil-rathen*, which signifies the corner of ferns, alluding possibly to the abundance of this plant in the sandy warrens on both sides of the Bann, towards the sea; or, with greater probability, it is derived from *Cuil-rath-ean*, that is, the fort on the corner (or bend) of the waters. Certain it is, that three of the most remarkable raths, or fortified mounds, have been in this neighbourhood, close to the water; 1st. Mount Sandel; 2d. Where the terraces of Jackson-hall now stand; 3. Opposite the Cranagh.

In the æra of monastic antiquity, Coleraine received the Latin appellative of *Bannina*, from the river Bann, which flows through its territory;

"Et sylvis coronatus superbo alveo oceanum petit."

Westward of the town and river, stood a monastery, founded in the fifth century by one of the noble family of O'Cathan. According to the records of this monastery, it appears to have been dedicated, in 1244, to the Virgin Mary, and to have been reformed by the Dominican order in 1484. In 1644, it was erected into an university, by the general council of Rome. Whoever chooses to dip further into the monastic history of this place, may consult the Hibernia Dominicana; he will there find, among other things, a recital concerning a miraculous triumph of the Virgin's image over the English, or rather Scottish Bishop, Brutus Babington, and all his attendants, in 1611. Father Burke records, from his own observation, that in 1751, after diligent enquiry, he could find but few traces of this church and convent.

The farms belonging to this convent were surrendered to the commissioners of King James 1st. and by him granted to the London Society. The last prior was Shane O'Boyle. It appears to have been a very eminent foundation, and is recorded to have sent forth two bishops, two authors, and eight martyrs.

There was also at Coleraine a priory of canons regular, of which St. Carbreus, a disciple of St. Finian, was the first bishop, or rather mitred abbot, in the year 540. Armidius, the abbot, was put to death by the

the Danes in 930. Thomas M'Uchtry built a castle on the bank of the Bann in 1213, for the erection of which the abbey was destroyed, except only the church, now called Killowen.

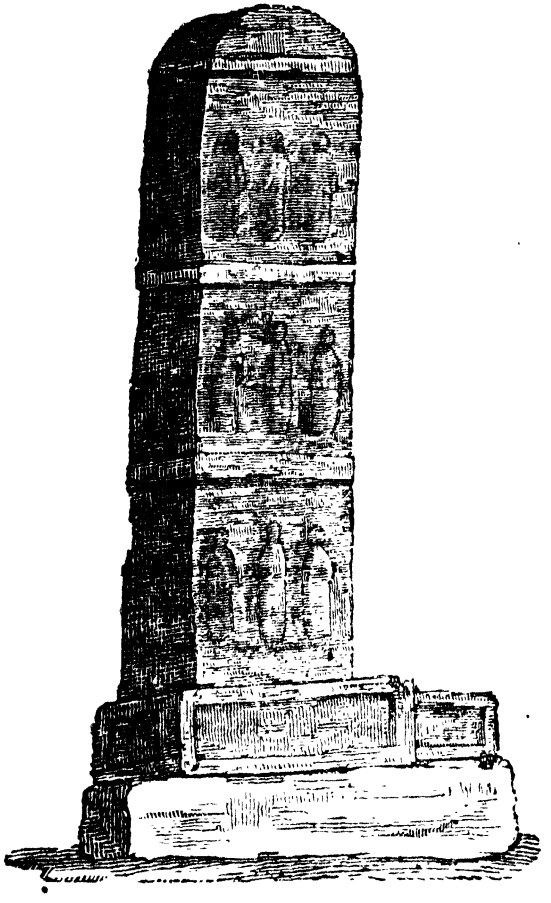
This church is still in good repair, and is parochial in the diocese of Derry. As to the other ecclesiastical buildings, I think the probability is, that some other convent extended from the church of Coleraine to the banks of the Bann, near Mr. Rice's. In digging foundations, bones have been found in great numbers at the latter place, and at the former, I understand, some slight traces have been remembered.

I proceed to other noted remains of antiquity.

Cambos, now called Camus.

About three miles south of Coleraine, on the Bann, St. Congal founded a celebrated monastery in 580. I suggest to the author of Monasticon Hibernicum, that this is now a ruin; the very foundation stones have been displaced. The font only remains, with a curious pillar sculptured, but effaced, of which the reader will find a drawing.

Pillar in Camus Church-yard.



Moy-

Moy-cos-quin.

It was called the abbey of the Virgin of the Clear Spring, founded by monks of the Cistertian order, in 1172. The church is in repair, and is parochial; nothing else remains.

Aghad-dubthaigh, now *Ayadooey*,

Was an abbey, founded by St. Goarus in the 7th century.

Dishart-hy-thuachuill. Desart-toghil.

In Oircacht Hy-Cathan (*i. e.* the demesne lands of O'Kane); it is mentioned as being near the Bann. I beg leave to say, that it is close to the town of Garvagh.

Arrigal—now *Errigle.*

In the barony of Coleraine. St. Columb founded this monastery in the territory of Oireacht Hy-Cathan. It is still the denomination of a rectory.

Boith-

Boith-medhbha. Bovevagh.

There stood a monastery founded by St. Patrick. St. Aidan, nephew to St. Patrick, by his sister Sinecha, was abbot of it. It is still a rectory; the church out of repair.

Temple Finlagan. Tamlaght-finlagan.

A Priory, founded by St. Columb. The first abbot was St. Fuinlagain. The old church is a ruin on the stream behind Bessbrook. There is a tower in the north-west corner, still visible. The new church is an elegant edifice, with a spire of great beauty.

Rathregenden.

Founded by St. Columb for St. Bairan. It is impossible, from this inaccurate description, to mark the site of this. Perhaps Aghanloo or Drumachose, or one of the old churches of Magilligan.

Aird-Magiollagain. Tamlaghard, or *Magilligan.*

A monastery was erected here by St. Columb. When it grew very rich, it was called the shrine of St.,

St. Columb. It was plundered in 1203 by Dermit Hya Lochluinn, who, at the head of a party of foreigners, (probably Danes) attempting to plunder *Kenet Eoquin*, was pursued by the lords of that country, and he, with many of his followers, was slain. I confess, that I cannot ascertain what territory is meant by *Kenet Eoquin*. As to the shrine of St. Columb, it must have stood where the present Catholic chapel now is; let the reader consult what follows.

Dunbo.

Under this title, the Monasticon Hibernicum relates, that St. Patrick founded Duncruthen (*i. e.* the fort on the round-hill) for St. Beoan. In Magilligan, there is a very remarkable hill of this description, and on it are found all the traces of a very ancient burying-place. One part of it is called, to this day, the canon bank, not improbably from tradition of its having been a convent of canons regular. There is, also, a traditionary recollection of a great robbery having been committed by the Danes, and of a great battle in consequence.* So far it might seem,

* At Knock-tenant, in Myroe, the land, when opened by a great wind, discovered heaps of human bones, not many years ago. I observed exactly the same thing in the western tract of Innishowen, beyond Bynian. Not unlikely, the slaughter was occasioned by some battle with the Danes.

seem, as if the convent in question had been at Dumcruin, and the robbery at the same place, rather than at the present chapel; but then the Monasticon adds, that it is opposite the Atlantic ocean, and on the territory of Machare: (does that mean Derry, formerly called Macharabeg, or does it intend the present Maghera?) it is also mentioned, as in the barony of Coleraine. I cannot resolve this; not unlikely, there has been another Duncruthen, where the ruined old church of Dunbo now stands.

Domnach-more, or *Domnach-dola*.

Near the Fahan-water, in the barony of Tyrkerin. Besena, a disciple of St. Columb, was the founder. His brewer is recorded to have been his presbyter. Unless the Fahan river has changed its course, which I think not unlikely, this convent is not justly described as that, whose ruin is so beautifully seated on the bank of Enoch-lough. There is, indeed, no situation more tempting for the residence of a brewer; and so far the probability need not be quite ridiculous. To be serious however, there is, in Fahan-vale, the ruin of a very handsome edifice, built of free-stone. I know not which is here meant; they are both in Tyrkerin. In the oldest map of the county, this last district is set down Fochan, signifying provender, or rather Foch-muin, (soft provender).

provender). Which description is likely to be of that corruptedly spelled Fahan? St. Patrick founded this church (" *which still retains its antient name*") in the valley of Gelannaicle, and two miles from Derry.

At Straad-bally-arran, also near the Fahan-river, are the ruins of a small church, which the country people report to have been the second, which St. Patrick founded in Derry. Near it is a small lake, and a hill, with a stone cross, all on a diminutive scale.

Both-Dhomaigh. Badoney.

Here, again, is said to have been a monastery near the *Fochmuin river*; can this be either of the above mentioned? I take the liberty of mentioning, for the consideration of the author of the Monasticon, that it can hardly be the rectory of the lower Badoney, in the county of Tyrone, beyond Newtown-Stewart. The topography will admit of but two sites, either the old ruin of Clendermot, or that of Enoch. The former is about two miles from Derry, the latter three.

Dun-yeven—Dungiven.

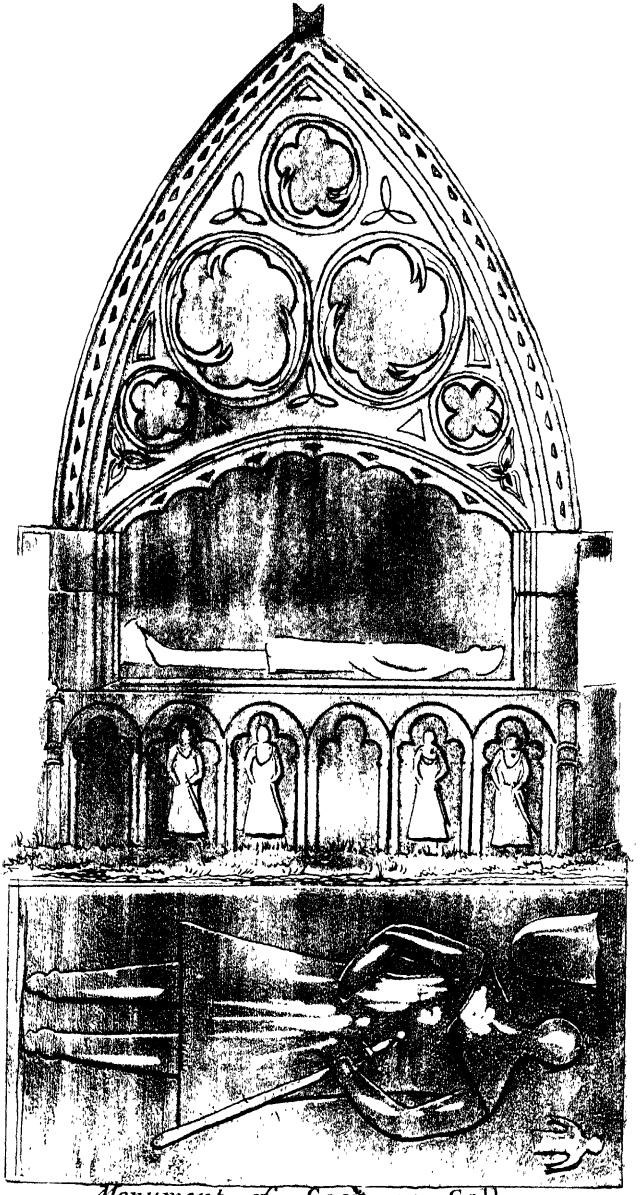
In 1100, O'Cathan founded a priory for canons regular of the Augustinian order; which having been polluted by the effusion of Christian blood, both

its

its church and cemitery were restored by the archbishop of Armagh in 1297. The adjacent village belonged to Dermit O'Cathan.

This ruin is, undoubtedly, the most interesting in our county. It was the burying-place of the sept of O'Cathan. Many of their tombs are ornamented with scutcheons, &c. in no mean stile of sculpture; but the principal monument is in the south of the altar, and is sacred to a very remarkable chief of this family, in Latin, surnamed Congalus. In the Irish, this name is Cooey-na-gal; that is, Cooey of the English. The name, Cooey, is still common in this family; and it is curious enough, that in any law matters, it is put down, Cooey, alias Quintin Kane. As to the agnomen or surname, it was probably derived from some exploits over the English, in the early conflicts between the two nations. Thus then, the abbreviation, Congal, means Quintin, of the English, which is latinised by the Monkish historians, in the same corrupting manner as the Greeks used, effectually disdaining the terminations of barbarous names, and thus confounding not only etymology, but history itself. The surname of Congal seems to have early been used by others of that family; for instance, by the ecclesiastic already mentioned. Lady-Cook's Castle stands boldly on a rocky bank of the Roe. I take this to have been built by the Doddington family.

I present



Monument of Cooy-na-Gall.

The same deficiency of antiquities, as to Maghera, is observable: yet, doubtless, this was a place of repute. According to some, the etymology of the name is Magherra-Nadhra, *i. e.* the field, or plain of solemn vespers; according to others, an oracle. I have heard, that a monastery of canons regular had been founded here. It was a consistorial seat, and a place of convocation. Near Fortwilliam, and not far from this, there is a hill called Dunno Ghrunin, that is, the strong hill of the assembly. At certain festivals, the people used to be gathered together at this place.

The old church of Bally-na-screhen is also a place of high antiquity, unnoticed in the Monasticon. This place was not originally intended for a church by St. Patrick, but for a library, (in Irish *Schren*); it was afterwards consecrated, and erected into a church by St. Columb. At this church, which is now a ruin, the bones of a giant were shewn. His name was Patrick O'Hagin Mc.Art. He was killed by the inhabitants of the west country, who overtook him with the booty, which he had carried off from them.

Tumuli. Tombs.

At Mullagh-cross, which signifies the round mount of the cross, lying behind Daisey-hill, there are the remains of tumuli or sepulchral mounts. In one of

of these, bones in crocks were discovered. The nearness of the old church of Finlagan affords an example of what has already been observed; that the Irish apostles preferred the sites, which were venerated by the pagan worshippers. How much better and wiser they, who, in those times, grafted the Evangelical upon the Druidical culture, than they who, in subsequent times, instituted a system of extirpation, in order to regenerate!

At Dovine, (in Irish, Domhuin, or the deep hollow) which is in the slack of Dunmore, (or the great fort) besides one vast tumulus, I think there are several small ones adjacent; probably these belonged to the relatives of the chief.

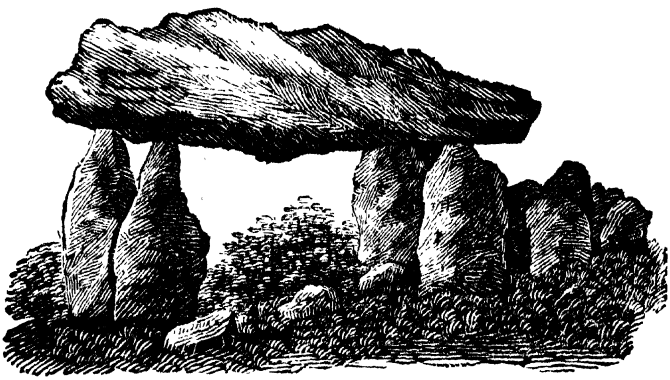
Encampments.

There is one of these visible, by its traces, near Mr. Mackay's, at Prospect. Another, with an entrenchment between Gort-na-garran and Cathery; it is in shape a parallelogram, whose longest dimension is about 100 yards.

The *Giant's Sconce*, is the most eminent remains of antient fortification, situated in the pass from Dunbo to Largantea. It seems intended to command the direct communication between the districts of Newtown and Coleraine. It has been, originally,

ginally, one of those high insulated knolls of basalt, which are frequent in its own neighbourhood: difficult of access, on all points, except to the north-east, where art has supplied a strong wall of massy rocks. The interior has been hollowed, probably to contain men and stores; and around the entire has been a covered way, at least it is discernible in the artificial part. This way, however, admitted only a single person at once, and that person creeping, or much stooped. As to its name, the legend is too puerile to be worth recording. From this fort may be seen the opening of the Bann, with the beach on either sides. On the south, Moycosquin with its bleach-greens, and interior rugged scenery, terminating in the foreland of the Cedy. The slack of Largantea is to the south-westward, the Magilligan range dying away at the entrance of Lough-Foyle, and behind this, the Innishowen promontory. North lies Down-hill, and thence, to the east, the coast and the promontory to the Giant's Causeway; in the interior rises Knock-lead, conspicuous in the Antrim range, and nearer is seen the long reach of the valley of the Bann.

Slaght Manus Cromlech, or Druidical Altar.



Cromliagh or Cromlech.

Sloping Stones. There is one of these at Slaght Manus, (*i. e.* the death of Manus). There is another at Letter Shandenny, *Lithar-sion-danach*, which probaby signifies, the solemnity of the valiant league. Another of these is in Balteagh, and a fourth not far from Salters-town. Some others are to be found in Bally-na-schrehen. Some of these are surrounded by a circle of upright and fallen stones, like the Stone-henge of England.—In Bally-na-schrehen a person took some stones from a cromlech to build his house,

house, his fortunes ever after were adverse; at last, he has partly restored the stones, and hopes for better.

Kairns.

These are too numerous for particular mention. The learned seem to admit, that they are of Phenician origin, and brought thence to Ireland. They seem to be as old as the time of Noah, Gen. xxxi. 44. Exod. xx. 25. This was the idolatry in high places. These have been not only places of religious worship, but also of piety to the dead; of this the authority is in Virgil:

"Monte sub hoc lapidum tegitur Balista sepultus."

To this day, the original Irish are fond of carrying a stone to leave on a kairn; and we find, that Apollo, or the Baal of the Phenicians, was stiled *Kairneios* Apollo.

Danish Ditches,

Are sometimes dug up, which have been deeply covered by vegetable soil; these are, of course, very antient; they enclose spaces of from half a rood to four acres; no regular figure.

Sepulchral Pillars.

I have already mentioned one very remarkable near Dungiven; I have seen many others in the county of

cient barely for a man to pass, in a stooping, or rather creeping posture. The length varies. The mouth of the cavern was usually concealed by a rock or grassy sod. They consist frequently of galleries; some of these are at right angles with others, and then again proceed parallel to the first; that is, they are again at right angles with the second gallery.

Raths.—Danish Forts.

These are too common, and too well known, to need description. They are all disposed, so as that a fire, kindled in one, may be seen to the next on either side; it seems the telegraph is not entirely modern.

Moats.

Another specimen of antiquity is to be seen on the road from Spring-hill to Lough-neagh, a little to the left, in a low situation. It is a kind of small moat, round, and thrown up apparently from the fosse, which surrounds it. This fosse is now a quag. The moat has probably been sustained on piles, because these are found in it on digging. Coins, pins, rings, and forks have been also found in it. Another of these is on the right of the road, leading through Loghermore from Cumber Claudy. At a place called Dun-gorkin, *i. e.* the fort of famine, the fosse, which is elliptical, is 84 feet wide. The

mound is, in the greatest diameter, 186 feet, and, in the lesser, 129 feet. The inner is a circle of 45 feet diameter. There is a causeway of piles, over which cross-beams had been placed first, and, over these, tranverse pieces. A spacious gate of oak had also been dug up, opposite to this bridge or causeway. The trees, growing on the mound, were alders, sallows, and mountain ash. These enclosures lie too low for safety, or for strength; they are so small as to contain not more than 30 persons, or thereabouts. Q. Have they been places of religious retirement or worship?

Querns of freestone, hatchets of basalt-stone, spears of grey granite, arrows of flint, are found in this county.

Old Castles.

Those of Irish erection are but few. The castle of Carrick-reagh is probably very antient. I conjecture from its site, in the country of Mc.Quillan, that it belonged to one of that family. There is neither record nor legend concerning it. Near the church of Ballyaghran, on a slope, on the east bank of the Bann, stood another castle, reputed to have been the abode of the chief Mc.Quillan. It has lately been pulled down, merely to build a ditch. I am ashamed to mention the name or profession of the despoiler. In the grout I found pieces of pit-coal,

coal, which confirms the belief, that mining is of great antiquity.

There were several English castles with bawns, one, at least, in every proportion; but none remains now in such good repair, as that of Killoloo, that near Dungiven, that of Salterstown, and that of Muff.

SECT. 28.—*Churches, resident Clergy, Glebes, Glebe-houses.*

THE present bishop has been zealous in enforcing the building of glebe-houses. In many districts, these are the only dwellings, which betoken the residence of gentlemen. For particulars, consult the second section of the first chapter.

SECT. 29.—*Whether the county has been actually surveyed, &c.*

ABOUT the year 1608, a survey was made by Sir Josias Bodley. The map is said to be extant. In 1618, a survey was made by Captain Nicholas Pynnar; no new map was annexed to this report, for which see Harris's Hibernica. Within these few years, surveys and maps of the county, the baronies, and the liberties of Londonderry and Coleraine, have been very ably made by Mr. Mc.Crea, of Lifford.

SECT.

Sect. 30.—*Weights and Measures.*

As to the former, we have three different weights, all under the denomination of hundreds; viz. the long hundred of 120*lb.*; the middle of 112*lb.*; and the short of 100*lb.* We have great varieties of the pound also; one of 20 *oz.* by which butter is frequently sold; another of 18 *oz.*; and a third of 16 *oz.* In the city of Londonderry, oats and potatoes are sold by the stone; but, in the country parts, by the bushel. Barley is sold, either by the stone, or bushel of 40 quarts. It has been usual to heap the measure, which has occasioned the construction of a measure, called a full, which contains two bushels, and so contracted, as to admit a very small heap. The barrel generally contains four bushels; but, with regard to grain, there are several variations; thus, four bushels of wheat make a barrel; five of rye; six of barley; and six of oats are required to make a barrel. The boll is, in Derry, 12 bushels, whilst, in Antrim county, it consists of but 10 bushels.

All these irregularities stand in need of correction.

As to long and square measures, we have English miles as well as Irish, and we have English, Scottish, and Irish acres. For understanding the proportion

proportion of these, the following ratio may be referred to.

	Feet.
The English perch contains, - -	16½
The Scottish ditto, - - -	18½
The Irish, called also plantation, ditto,	21

CONCLUSION.

I TAKE the liberty of suggesting some hints, respecting the means of improvement, to those gentlemen of the county of Londonderry, who have the skill, power, and disposition to carry them into effect.

Perhaps the greatest defect, as to agricultural purposes, is the partition of farms into patches. If the sum of the arable lands were placed in the occupancy of skilful capitalists, there is no question as to the increase of product; nor do I think, that the daily labourer, well paid by a substantial farmer, would be so poor as the holders of small patches of 2, 3, or 4 acres of the worst ground are now, according to the actual state, in which I have minutely observed them.

The next defect is, the nature of tenures. I may say, that the general run of leases do not exceed 21 years, with only one life, that of the lessee. Nor

is

is there much confidence placed by the tenant in the preference called *tenant-right*. He sees, on the contrary, that in many instances, whatever improvement the laborious youth of the farmer may accomplish, will realize nothing certain for his family. The farm will often be advertised, perhaps, and the stoutest beggar will get it over head. If our lands were in that highly improved condition, and if their value, as to product, were as well ascertained, as the farms in England have been, there might be, possibly, no great necessity for long leases; especially when there would be, as in England, a well grounded reliance on the liberal consideration of the landlord. But, in a country, yet in its rude infancy, where great toil and expence is necessary to reclaiming and improving, it cannot be expected, that rapid and permanent advances will take place, on a great scale, without some better encouragement.

I have already mentioned, that the ecclesiastical lands in our county are in the best state. Lord Bristol is an excellent landlord, and the Primate has a tenantry greatly superior to any other in their neighbourhood: yet church-lands, in some respects, are not supposed to be well circumstanced for improvement; this I do not affirm or deny; I speak of them only by comparison.

As to the question, whether this county, considered with regard to manufacture, is not in a better

state,

state, when divided into small farms for the weavers, than if it was occupied by real agriculturists, I do not presume to offer a decisive judgment; yet it would be unpardonable not to give my humble opinion.

I think that, considered in the abstract, whatever will promote agriculture, will tend to cheapen the rates of provisions; and whatever will afford an undisturbed attention to trade, must bring to the tradesman the increased means of supplying his wants. If the weavers were settled, in healthy villages, with just as much land as would give them exercise and recreation in the employment of the spade alone, without the anxieties and distresses incident to the wretched people, called little farmers, I really think their condition would be improved, both as to health and the product of labour.

It will be asked, how is the poor weaver to supply milk to his children? I answer, the fact is, that the children of the weaver, under the present system, are *without* milk many months, and have not a *plentiful* supply any single month in the year; his cow is starved in summer, whether on his own patch of lea, or on that of the next farmer; in winter, the same cow, fed on straw, gives a poor supply; and, in spring, there is *no milk* whatever. Besides, if any accident happens to the cow, how great, perhaps how irretrievable the loss!

On

On the contrary, if landlords would fix on suitable situations, in various parts of their estates, for the erection of manufacturing villages or hamlets; and if, for a certain distance around these villages, the lands were let to substantial farmers, under certain regulations, I think the condition of the parties might be improved.

The regulations, respecting agriculture, which strike me, as likely to promote these objects, are as follow:—The farmers should be enjoined to rotations of crops, which would ensure the keeping of stock, especially for the *dairy*. In good soils, red clovers should be sown with every crop of barley; white clover or grasses with every crop of oats; and no wheat should be permitted; but turnips, vetches, borecoles, or rape should be insisted on.

It would conduce greatly to the success of this, if the landlord kept one farm, at least, in such situations under his own management. Precept is good, but example is better. I know that many will say, "you can never bring men to come up to these injunctions;"—they will stick to their old habits;"—"these things are well enough on paper, to be said by speculative men, who are unacquainted with the character of our country people," &c.

To all this I venture to reply; the thing is good to be done. The accomplishing of it is possible; he, that first brings this scheme to perfection, will be the

the benefactor of thousands now, and ten thousands after them :—If this be not a sufficient motive, I have nothing to hope.

As to farmers, I shall take the liberty of offering a few suggestions. It might greatly conduce to their advantage, if the landlord took upon himself the dividing of farms, the squaring of fields, the ditching, and quicking of them. A parcel of poor undertakers of a town-land are utterly inadequate to these essentials. Yet so great would be the accession of comfort and security, that, if the proprietor were to charge 12 *per cent* on the money so laid out, I make no doubt, but the advantage would still be 30 *per cent.* to the tenant.

The opening of limestone quarries ought not to be left to the tenants. How often do we see one countryman, in taking the easiest parts, throw the rubble in the very way of the next comer, who has, perhaps, as much labour in getting rid of the obstruction, as in procuring the stones. At *Tumnairon*, I observed a plan worthy of imitation. A quarry-man was appointed, who raised the stones at 1*d.* per cwt. and every tenant had his quantity laid a part for himself, without trouble or delay.

Landlords would do well to supply seeds from good markets, and at first cost; these might be sold by a person appointed, who could be indemnified along with the landlord by a small advance. The tenant

tenant would be thus induced to buy seeds of clovers, grasses, turnips, &c. which otherwise he would not look for, and which he often might get of so bad a quality, as to deter his future attempts.

Nurseries, for rearing forest trees, are essential to the improvement of our naked wastes. The young trees ought to be given gratis, with premiums for preserving, and penalties against destroying them. There are great tracts of rocky wastes, now utterly unproductive, which the landlords might make valuable to themselves and the community, merely by sticking down trees reared in their own nurseries, without much expence. If some such thing is not done, the county of Londonderry will, in half a century, be utterly destitute of useful timber.

Where great difficulties are in the way of the laborious tenant, and where a long lease has expired; perhaps it is not the best way to load him, all at once, with a *triple* or *quadruple* rent. The last years of a lease are a period of relaxed industry; the farmer fears to shew the value of his land, lest it might induce others to outbid. In such circumstances, would it not be better, to let the farm, on *conditions*, with *clauses of renewal?* Thus, if the tenant improves so many acres, or farms, in such a prescribed manner, at the end of 10 years, he shall have a renewal at a certain rent, otherwise not; and so on for 40 or 60 years. But, if the landlord

charges

charges an over-rent on a weak tenant, without some such encouragement, he is answerable for the destruction of the tenant to God, and he is responsible for the decline of his property to his posterity, and to the community itself.

The introduction of good breeds of cattle is of great importance. No county is in greater need of this aid. Among the farmers, there is no such thing as a good bull or ram; all is promiscuous, and the consequence is too visible.

I beg pardon of those, who are much better judges, for obtruding these remarks. To some, perhaps, they may be useful; at all events, they are not ill intended.

APPENDIX.

NO. 1.

On Magnetic Variations.

IN traversing various mountains with a compass, I found considerable variation, in those especially of basalt. In the schist there was no sensible variation, except in the neighbourhood of iron mines.

The magnetic variation is a subject of so great curiosity, that I shall be excused for recording at this place all that has come to my knowledge on this topic.

As to the daily variation, Mr. Anderson Hood says, that the needle gets to the eastward of its meridian from nine in the morning till two in the afternoon, and that it returns at four.

With regard to the annual variation, Mr. M'Cart, of L. Derry, an ingenious and experimental surveyor, says, that the magnetic variation, in the year 1759, in the county of L. Derry was $19\frac{1}{4}^{\circ}$ west, and that in the present year, 1802, it is $27\frac{1}{4}^{\circ}$ west; he thinks, that, a century ago, the variation was to the east.

Mr.

Mr. Colhoun, a surveyor of great merit, says, that, according to his father's notes, and his own observations, the variation is thus:

May, 1772,	variation	west,	-	-	23	20
May, 1787,	ditto,	ditto,	-	-	27	0
May, 1791,	ditto,	ditto,	-	-	28	0
Oct. 1800,	ditto,	ditto,	-	-	29	36

By comparing this with the former statement, it appears, that the magnetic meridian is again coming back towards the true meridian.

I have lately examined the maps of the Down survey, so ably copied by General Vallancey, and find, that in the year 1657, at which time that survey was made, the magnetic and true meridian coincided very nearly. According to an observation, made by Mr. Molyneux, in 1695, the variation was seven degrees west. In Dublin, the following variations have since been observed:

				°	′
1722,	variation	west,	-	11	15
1751,	ditto,	ditto,	-	19	0
1768,	ditto,	ditto,	-	22	45

NO. 2.

From Harris's Hibernica, and also from Captain Pynnar's Survey, Anno 1618.

" The county of Coleraine, otherwise called O'Cahan's country, is divided, as Tyrone, by ballyboes, and doth contain, as appeareth by the survey, 547 ballyboes, or 34,187 acres; every ballyboe containing 60 acres, or thereabouts, as in Tyrone, out of which do arise 24 proportions and three ballyboes, or 187 acres over, to be added to the next parish; viz. of the one moiety there do arise 17 of the least proportions, (each 1000 acres) and of the one half of the other moiety, six of the middle sort, (each 1500 acres) and of the other half of this moiety, four of the greatest, every of which proportion is to be made a parish, and every incumbent to have his tythe, glebe, and other duties, as is before set down."

For the portion of the Church.

" 1. The termon (tyr-monach, i. e. monastery lands) claimed by the Bishop of Derry, do contain 101½ ballyboes, or 6343¾ acres, and may be assigned, if it so please his Majesty, to the bishoprick of Derry,

for the better maintenance of the Bishop and dignitaries, and in lieu of the tertia episcopalis, &c.

" 2. The Dean of Derry's lands, containing six ballyboes, or 375 acres, to remain to himself.

" 3. Out of the residue, 34 ballyboes, or 2125 acres, may be assigned to the glebes of the incumbents.

" 4. Out of the monastery lands, 18 ballyboes, or 1125 acres, may be passed to the College of Dublin, and the other six ballyboes, or 375 acres, to be allotted towards the maintenance of a free school, to be erected at Lymevaddy."

Portion of the Undertakers.

" All which being deducted, there remain 382 ballyboes, or 23,875 acres, to be divided amongst the undertakers, which will make, according to the form of division made of the lands of Tyrone, 18 proportions, of the least (each 1000 acres) eleven, of the middle (each 1500 acres) four, and of the greatest (each 2000 acres) three, and 875 acres over; whereof may be allotted to English and Scottish undertakers 12 proportions, viz. eight of the least, and two of the greatest. To the servitors, one of the middle sort; and to the natives, five proportions, viz. three of the least, one of the middle, and one of the great."

" The

The natives to be planted as in Tyrone, i. e. some made freeholders, some on the glebes of parsons, and others on lands purposely assigned; others again upon the portions of such servitors as were not able to inhabit such lands with English or Scottish tenants. As to the swordsmen, some conditions, respecting the transplanting them into other countries, were rejected. Other conditions of the project were also changed. When the county is said to contain so many ballyboes, acres, &c. all that is meant is, that it contains so much escheated and profitable land, exclusive of waste, unforfeited, and church lands.

From a Paper, printed in 1608, *entitled, Orders and Conditions, &c.*

It appears, that it was stipulated, that the undertakers of the several proportions should be of three sorts,—1st. English or Scottish, as well *servitors*, as others, who were to plant their portions with English or inland Scottish tenants.—2d. Servitors in the kingdom of Ireland, who may take mere Irish, English, or inland Scottish tenants, at their choice.—3d. Natives of Ireland, who are to be made freeholders.

It was also stipulated, that, to avoid emulation and controversy, the scites of the portions should be distributed by lot; but in the articles for instruction to the

commissioners, this was retracted, lest it might prove a discouragement to the settlers.

Concerning English and Scottish undertakers, who are to plant their portions with English and inland Scottish tenants; also concerning such servitors in Ireland, as shall have power to inhabit their portions with Irish; and also concerning Irish natives, who shall be admitted to be freeholders, there are several articles, which the reader may find in Harris's Hibernica, page 125 & seqq.

From the survey of Captain Pynnar, made between the first of December, 1618, and the 28th of March, 1619, it appears, that the following were the original undertakers and agents:

1. Goldsmiths Hall, John Freeman, Esq.—By estimation, 3210 acres, 30 families, 90 able men, with arms.

2. Grocers Hall, Edward Rone, 3210 acres.—Inhabited mostly with Irish.

3. Fishmongers Hall, James Higgins, a London merchant; his agent resident.—3210 acres, 34 families, 40 able men, with arms.

4. Ironmongers Hall, George Cammynge agent for the company, 3210 acres.—An infinite number of Irish, which give such rent, that the English get no land.

5. Mercers Hall, held by one Vernon for the company, 3210 acres: chiefly Irish.

6. Merchant

6. Merchant-tailors Hall, in the hands of Valentine Hartopp, Esq. 3210 acres.—29 families, 40 able men, with arms.

7. Haberdashers Hall, Sir Robert M'Lellan, 3210 acres.—80 able men, with arms.

8. Clothworkers Hall, the said Sir Robert M'Lellan, 3210 acres.—Only one freeholder, the parson of the parish, the rest Irish.

9. Skinners Hall, Lady Doddington, late wife to Sir Edward Doddington, 3210 acres.—27 families, with under tenants, making 80 able men, with arms.

10. Vintners Hall, Baptist Jones, Esq. 3210 acres. 76 men, with arms.

11. Drapers Hall, held by the agent, Mr. Russell, 3210 acres.—Number unknown, but sufficient arms.

12. Salters Hall, Hugh Sayer is upon this proportion, 3210 acres.—Number unknown.

The whole number of English and Scottish families, estimated in the county of L. Derry at this time, was,

Freeholders,	- -	25
Lessees for years,	-	78
Cottagers,	- -	16
Total Families,	- -	119
Total Bodies of Men		——642

The

The whole contents of the six counties were,

Freeholders families,	-	334
Lessees for lives,	-	99
Lessees for years,	-	1013
Total, - -	-	1446
Total bodies of men,	-	——6215

On the occasion of the plantation of the six escheated counties, the hereditary order of knighthood, with the title of baronet, was introduced. King James 1st. devised this species of honor, which was purchaseable, that from the sale of such titles to all those, who chose thus to contribute, the charges of maintaining the English power, in the remote province of Ulster, might in part be defrayed; and hence it is, that the coat of arms, borne by knights baronets, is the armorial ensign of Ulster.

NO. 3.

Use of Flaxseed.

I found, that a pint of flaxseed was enough to boil into jelly every day for one calf; when in this state, after being reduced on a slow fire from three to two quarts, it is occasionally diluted with warm water.

The

The calf should be fed at least three times each day. A little buttermilk is adviseable, and I will give my reasons to the chemical reader, against the common adage, which, contrary to the usual veracity, affirms, that *buttermilk has no bones*. But to be serious, the milk, by the operation of churning, has parted only with its oil; it still retains that, which nature has peculiarly destined for the growth of bone, that is, *phosphate of lime*; if to this we restore the oily principle of the flaxseed, we return at least to this emulsion all that is necessary for the aliment of the young animal. Seed may be obtained for this purpose by rippling off the top bows, as being earliest and plumpest; some have irons prepared like those of the flax-dresser. Whether the seed should be preserved for sowing I will not say, but for rearing calves, or feeding poultry, and even horses, it certainly ought. How easy will it be for the cottier to ripple off as much seed as will enable him to give an increased quantity of new milk to his children, whilst the offspring of his invaluable cow, the hope of his future sustenance, receives no injury, but rather an advantage?

No. 4.

CATALOGUE OF SOME OF THE MOST REMARKABLE NATIVE GRASSES AND PLANTS, OBSERVED BY THE AUTHOR IN THE COUNTY OF L. DERRY.

The *Arrangement* is alphabetical, for the purpose of affording the means of finding the common name, with the description, of any grass or plant *mentioned* in this work.

Botanic Names.	*Common Names.*	*Observations.*
AGROSTIS		
Alba,	white bent grass;	in wet meadows and ditches.
Capillaris,	fine bent grass;	the commonest of all in dry meadows and worn-out leas.
Stolonifera,	creeeping bent grass;	this is the *fiorin*, so often mentioned; the English call it joint-grass.
Spicaventi,	silky bent grass,	both in meadows frequent.
Rubra,	red bent grass;	
Canina,	brown bent grass;	in very wet meadows.
Maritima,	sea bent grass;	this grows on the coast of Myroe. Perhaps it might be useful in banking out the sea.

AIRA

Botanic Names.	*Common Names.*	*Observations.*
AIRA		
Cæspitosa,	turfy bent grass;	generally mountainous.
Flexuosa,	heath bent grass;	in mountains.
Uniflora,	single-flowered bent grass;	in woods.
Anthoxanthum odoratum,	sweet vernal grass;	the earliest of all our grasses; gives a fine scent to hay; is most common in woods and coarse grounds.
ALOPECURUS		
Pratensis,	meadow foxtail;	common in dry pastures and meadows.
Geniculatus,	flote foxtail;	in wet grounds, ditches, ponds, &c. but not common.
AVENA		
Elatior,	tall oat-grass;	a pestilent weed in gardens and worn out grounds.
Pubescens,	rough oat-grass;	on barren lands in Magilligan.
Flavescens,	yellow oat grass;	not so common.
ARUNDO		
Phragmites,	reed;	called by the weavers empty rot, used to wind yarn in the shuttle; common in wet grounds in Magilligan, elsewhere.
Calamagrostis,	woolly reed;	frequent in the moist meadows of Magilligan; low ditches of Aghanloo, &c.

Botanic Names.	*Common Names.*	*Observations.*
ARUNDO		
Arenaria,	sea reed;	on the shores, not common.
ASTRAGALUS		
Glycyphyllos,	liquorice vetch;	in mountain pastures.
ALCHEMILLA		
Vulgaris,	lady's mantle;	very common; a plant of no small elegance.
Alpina,	cinquefoil lady's mantle;	like the former, but less; it is common in the high pastures.
ACHILLEA		
Millefolium,	yarrow;	on pastures, on the banks of the Fahan, &c.
Ptarmica,	common sneeze-wort;	in woods.
ANEMONE.		
Nemorosa,	wood anemone;	greatly over-runs high pastures, especially the Grange of Largantea; it is reckoned good, when made into salve for the scab in horses.
Ranunculoides,	yellow wood anemone;	a plant worthy of the garden. I never met it, but under Mr. Waddy's of Killaloo, close to the Fahan river.
ANAGALLIS		
Arvensis,	blue pimpernel;	in corn fields, not common; there is a reddish variety of this, a smaller plant.
AMMI		
Majus;	bishop's weed;	A very pestilent weed in gardens, and near walls in any ground;

Botanic Names.	*Common Names.*	*Observations.*
		ground; abounds at the old fort of Ballycastle.
ANGELICA		
Sylvestris,	wild angelica;	in woods or moist hedges, an aromatic plant.
ALSINE		
Media,	chickweed;	in loose and rich ground, and in gardens, a troublesome weed; the young shoots equal to spinach in spring.
ALLIUM		
Ursinum,	ramson;	it is called *ramps* by the farmers; abounds in Ballymaghir, has a powerful taste of onions; pollutes milk, if eaten by cows; the country people eat it, both as a medicine and a *dainty*.
ARENARIA		
Peploides,	sea sand-wort;	an elegant plant, abounds along the coast.
Serpyllifolia,	thyme-leafed arenaria;	on the sands of Magilligan.
Verna,	mountain arenaria;	among the fallen rocks of Benyevenagh.
ANTHYLLIS		
Vulneraria,	yellow kidney-vetch;	on rocky pastures; abundant at Down-hill; a good dye-stuff, and ornamental plant.

Botanic Names.	*Common Names.*	*Observations.*
ARTEMISIA		
Vulgaris,	Mugwort;	an odoriferous plant; grows very rank in the crofts of Ballycastle; very common elsewhere; a powerful antiseptic; restores sour beer.
ANTHEMIS		
Arvensis,	corn chamomile;	in corn fields common; there are other varieties of this.
ARCTIUM		
Lappa,	burdock;	on highways, &c. well known. Before flowering, the stems eat like asparagus, if boiled; if raw, they may be eaten with oil and vinegar; the roots are equal to sarsaparilla.
ARUM		
Maculatum,	spotted wake-robin;	abounds among the wastes from Bally-carton to Downhill; the root of it makes starch.
Portulacoides,	sea purslane;	near Carrick-muddle, on the shore.

Botanic Names.	*Common Names.*	*Observations.*
ATRIPLEX		
Hastata,	lamb's quarters;	in gardens and waste grounds.
ASPLENIUM,	HARTSTONGUE;	several varieties; that called maiden's-hair grows on the Kedy.
AGARICUS,	mushroom;	many varieties; the campestris very common.
BRIZA		
Media,	middle quaking grass;	in pastures rare.
BROMUS		
Secalinus,	field brome-grass;	called by the farmers *sturdy;* powerfully narcotic, abounds in barley, and, when distilled into whiskey, excites sickness and phrensy, and afterwards stupor; it is a dye-stuff.
Squarrosus,	rough brome-grass;	in corn fields.
Mollis,	soft brome-grass;	in meadows, fields, hedges, &c.
Sterilis,	barren brome-grass;	all coarse and bad grasses.
Sylvaticus,	wood, or hairy brome-grass;	

BORAGO

Botanic Names.	*Common Names.*	*Observations.*
BORAGO		
Officinalis,	borage;	very common at Ballycastle, on the west of the Bann, and elsewhere; when young, a good sallad, tastes like cucumber.
BUNIUM		
Bulbocastanum,	earthnut;	called, provincially, pig-nut, very common in woods, pastures, &c.; the root is very grateful; in some countries, it is said to be offered as a desert.
BRASSICA		
Napus,	rape;	grows wild in Magilligan to a good size; I am cultivating this native plant.
Rapa,	wild turnip;	common in corn fields.
BIDENS		
Tripartita,	water hemp;	in marshy grounds, a good dye-stuff.
BELLIS		
Perennis,	daisey;	almost every where.
BYSSUS,	BYSSUS;	of this there are many minute varieties, on stones, old wood, &c.

CALLITRICHE

Botanic Names.	*Common Names.*	*Observations.*
CALLITRICHE		
Verna, vulgaris,	water horsetail, or star-grass;	in wet grounds in Magilligan, &c.; there are other varieties.
CALTHA		
Palustris,	marsh mary-gold;	well known by the name of May-flower, strewed before the doors before sun-rising on the 1st of May; a dye-stuff.
CAMPANULA		
Rotundifolia,	round leaved bell-flower;	on the barren pastures near Down-hill, and elsewhere; a dye-stuff.
CHÆROPHYLLUM		
Sylvestre,	cow-weed;	in shady places; a dye-stuff.
COMARUM		
Palustre,	marsh cinque-foil;	in the wet meadows of Aghanloo; a dye-stuff.
CYNOSURUS		
Cristatus,	crested dog's-tail;	in dry pastures common.
CONVOLVULUS		
Sepium,	great bind-weed;	among the planting nearest the sea, Down-hill; a good purgative.
CHENOPODIUM		
Murale,	wall goose-foot;	in rubbish, or rich gardens.

Botanic Names.	*Common Names.*	*Observations.*
CHENOPODIUM		
Serotinum,	late flowering blite;	on old dunghills.
Album,	common orach;	in gardens, a weed.
Maritimum,	sea blite;	on the coast, not very common.
CONIUM.		
Maculatum,	hemlock;	in rich soils and shady situations; very poisonous; applied to cancers.
CHIRONIA.		
Centaureum,	centory;	a bitter plant, antiently supposed medicinal; named from Chiron the Centaur, preceptor to Achilles; a very bitter plant.
CUCUBALUS		
Behen,	bladder campion;	seldom in corn fields; but a variety of it abounds on the rocks, near Down-hill.
COTYLEDON		
Lutea,	yellow navelwort;	at Mr. Alexander's green, at the Dog-leap, above Newtown-limavady.
CERASTIUM		
Vulgatum,	narrow leaved mouse-ear chickweed;	in meadows.
Arvense,	common chickweed;	in loose arable, or pasture.

COCHLEARIA

Botanic Names.	*Common Names.*	*Observations.*
COCHLEARIA		
Officinalis	scurvy-gass;	abounds at Port-stewart among the rocks.
Armorica,	horse-radish;	in the sandy hill of lower Drumbane.
CARDAMINE		
Pratensis,	Lady's smock;	in wet meadows.
CREPIS		
Tectorum,	smooth hawk's-beard;	on pastures and walls.
Biennis,	rough hawk's-beard;	in meadows.
CARDUUS		
Arvensis,	way-thistle;	in fields, every where.
Crispus,	curled thistle;	in ditches, &c.
Marianus,	mild thistle;	I met this only in Magilligan.
CENTAURFA		
Cyanus,	blue bottle;	in corn fields, and in ditches, common.
Nigra,	knap-weed;	in natural meadows.
Scabiosa,	great knap-weed;	in corn fields, on the sides of pasture enclosures.
CARI X		
Dioica,	Small carex;	these and other varieties are to be found in wet and barren grounds.
Panicea,	Pink carex;	
Vesicaria,	Bladder carex;	
DACTYLIS		
Glomerata,	Rough cock-foot grass;	in rich meadows, near hedges, in orchards, common.

Botanic Names.	*Common Names.*	*Observations.*
DAUCUS		
Carota,	wild carrot;	the country people esteem it a good diuretic; I have observed cows to eat the seeded tops.
DIGITALIS		
Purpurea,	fox-glove;	a powerful bitter; prescribed for the dropsy; near ditches, &c. very common.
ELYMUS		
Arenarius,	sea lime-grass;	on sandy grounds, near the sea.
EPILOBIUM		
Angustifolium,	rose-bay willow-herb;	in hedges; not frequent.
Hirsutum,	hairy willow-herb;	in Myroe.
Montanum,	smooth willow-herb;	in wet meadows.
Tetragonum,	square-stalked willow-herb;	in wet ditches.
Palustre,	marsh willow-herb;	in the fens of the old channel of the Roe; the flowers of these plants are good for dyeing.
ERICA		
Vulgaris,	ling;	on waste and barren land; a dye-stuff.

ERICA,

Botanic Names.	*Common Names.*	*Observations.*
ERICA		
Cinerea,	fine heath;	on moors and wastes.
Tetralix,	cross-leaved heath;	on wet moors.
Multiflora,	fir-leaved heath;	I believe it grows on Magilligan mountain.
EUPHORBIA		
Peplus,	petty ſpurge;	in gardens and loose ſoils; a weed.
Helioscopia,	ſun-ſpurge, or wart-wort;	the juice is white, caustic, and is applied ſucceſsfully to take off warts.
EUPHRASIA		
Officinalis,	eye-bright;	common on paſtures, ditches,
Odontites,	red eye-bright;	&c. antiently uſed as a ſalve for the eyes.
ERYSIMUM		
Officinale,	hedge-mustard;	on waſte ground.
ERIOPHORON		
Polyſtachion,	cotton graſs;	the ſpike reſembles cotton.
Anguſtifolium,	hare's-tail;	this is alſo downy; both grow in high moors.
FESTUCA		
Ovina,	ſheep feſcue graſs;	in mountain paſture.
Duriuſcula,	hard feſcue graſs;	in dry meadows, &c.

Botanic Names.	*Common Names.*	*Observations.*
FESTUCA		
Elatior,	tall fescue grass;	seldom met; in the meadows of Aghanloo.
Myurus,	wall fescue grass;	on old walls.
Decumbens,	small fescue grass;	in wet and barren land
Pratensis,	meadow fescue grass;	in meadows.
Fluitans,	float fescue grass;	very common in ditches, and in pits of bogs; it may one day become an useful plant in the culture of high wastes, abounding in water.
FRAGARIA		
Vesca,	wood strawberry;	on ditches; common.
GALIUM		
Palustre,	white lady's bed straw;	abounds in moist meadows, and on the ditches of the flats, west bank of the Bann, below Coleraine.
Uliginosum,	marsh goosegrass;	in moist fields.
Pusillum,	least galium;	on mountain pastures.
Verum,	yellow lady's bed-straw;	it is called cheese rennet, because it curdles milk; it is a good dye-stuff; the farmers call it straw-wall; it abounds

on

Botanic Names.	*Common Names.*	*Observations.*
		on dry soils and ditches. Bees are fond of all these plants. We rub our scaps with them, when we wish a swarm *to take.*
GALLOPSIS		
Ladanum,	red dead-nettle;	both frequent in corn fields, &c. called provincially *sting-nettle*; the sting is very dangerous.
Tetrahit,	common dead-nettle;	
GLECOMA		
Hederacea,	ground-ivy;	well known; the juice mixed with wine cures specks in the eyes of horses.
GIRANIUM		
Robertianum,	herb robert;	in woods, hedges, &c. emits a disagreeable smell around.
Columbinum,	long-stalked geranium;	in pastures and corn fields; in my farm common; a pleasing odour.
Rotundifolium,	round-leaved geranium;	on walls, or near them; not so common.
Sanguineum,	bloody geranium;	on the lands of Magilligan, common; there are several other varieties.
GNAPHALIUM		
Uliginosum,	marsh cudweed;	in wet places, common; there are other varieties.

Botanic Names.	*Common Names.*	*Observations.*
HIPPURIS		
Vulgaris,	mare's-tail;	in boggy grounds.
HYPERICUM		
Pulchrum,	upright St. John's wort;	a very elegant plant; common in woods, glens, &c. There are other varieties, some of which, I believe, are natives.
HYDROCOTYLE		
Vulgaris,	marsh penny-wort;	on the lower wet grounds of Loghermore.
HERACLEUM		
Sphondylium,	cow parsnip;	on the sides and corners of corn fields, meadows, &c. Cattle are fond of it. Might it not be cultivated to advantage?
HYACINTHUS non scriptus,	Hyacinth;	called hare-bell, blue-bell, &c the root is poisonous, but may be converted into starch; the whole plant abounds in mucus.
HIERACIUM		
Alpinum,	mountain hawk-weed;	on mountain pastures; near Ballyhacket, &c.
Taraxaci,	devil's-bit;	
Dubium,	creeping hawk-weed;	on the pastures of Down-hill.

HYPOCHÆRIS

Botanic Names.	*Common Names.*	*Observations.*
HYPOCHÆRIS		
Maculata,	ſpotted cat's ear;	on high paſtures.
Radicata,	long-rooted cat's ear;	in the meadows of Aghanloo.
HOLCUS		
Mollis,	creeping ſoft graſs;	called English white graſs; moſt uſually ſown; is a different claſs from moſt of the other graſſes.
Lanatus,	meadow ſoft graſs;	not unlike the former; more woolly; leſs ſpreading.
IRIS		
Pſeudacorus,	common flag;	provincially called *saggan*, or *flaggan*; the flower is a dye, and the root uncommonly acrid and aſtringent; the country people make ink with the root, the leaves of the black-berry, (bramble, rubus fruticoſus) and copperas.
JUNCUS		
Acutus,	ſea ruſh;	
Effuſus,	ſoft ruſh;	
Conglomeratus;	round-headed ruſh;	

Botanic Names.	*Common Names.*	*Observations.*
JUNCUS		
Compressus,	flat stalked rush;	all natives of barren pastures, either marshy or mountainous.
Pilosus,	hairy rush;	
Campestris,	field rush;	
LAMIUM		
Album,	white dead nettle;	in hedges.
Purpureum,	purple dead nettle;	in gardens—both weeds
LATHYRUS		
Pratensis,	meadow lathyrus;	grows like the vetch in natural meadows; in those of Down-Hill
LEONTODON		
Taraxacum,	dandelion;	i. e. dent-de-lion, or lion's tooth, from the shape of the leaf.
LAPSANA		
Communis,	nipple-wort;	in hedges; on loose ground.
LEMNA		
Minor polyrhiza,	duck-meat;	in ditches and stagnant waters.
LYSIMACHIA		
Vulgaris,	loose strife;	in Myroe, on banks of slow rivers; scarce; it is a dye-stuff.
Nemorum,	yellow pimpernel;	in the woods, near oaks.
LICHEN,	liken;	many varieties; on stones, ditches, &c.
LINUM		
Catharticum,	purging flax;	in dry fields.
Radiola,	rupture wort;	on wastes.

LYCHNIS

Botanic Names.	*Common Names.*	*Observations.*
LYCHNIS		
Flos cuculi,	meadow pink;	in the low meadows and ditches of Aghanloo, common.
MELICA		
Uniflora,	fingle wood-grass;	in wet wooded grounds.
Cærulea,	purple wood-grass;	in wet poor ground.
MONTIA		
Fontana,	water chick-weed;	in ditches, ponds, &c.
MYOSOTIS		
Scorpoides,	hairy mouse-ear;	called also scorpion grass; very common.
MENYANTHES		
Trifoliata,	buck-bean;	in marshes, wet ditches, &c. common; very bitter; medicinal; 2 oz. of this equal to 1 lb. of hops.
Nymphoides,	fringed water-lily;	in rivers, water-courses, &c.
MENTHA		
Aquatica,	water mint;	in ditches and wet grounds.
Arvensis,	corn mint;	in corn fields.

Botanic Names.	*Common Names.*	*Observations.*
MELANPYRUM		
Sylvaticum,	wood cow-wheat;	in the woods near oaks; very common; good for milch cows; worthy of culture.
MALVA		
Rotundifolia,	mallow;	on the sides of roads, &c.
Sylvestris,	common mallow;	in waste rich soils.
MEDICAGO		
Falcata,	yellow medic;	in hard ground.
MUSCI	mosses;	several varieties; whenever they appear on pasture, it should be ploughed or top-dressed.
NARDUS		
Stricta,	mat-grass;	in wet pastures, boggy lands, &c.
NYMPHAEA		
Alba,	white water lily;	in lakes and rivers; it is a dye-stuff; the yellow water lily has not been observed by me, except in the county of Donegal.
ORCHIS,	orchis;	many varieties of this and the satyrion occur in high grounds and wet meadows; the moſt beautiful is the militaris, which grows on the rocks near Down-hill, not near the sea.

ORNITHOPUS

Botanic Names.	*Common Names.*	*Observations.*
ORNITHOPUS		
Perpusillus,	bird's-foot;	in dry pastures.
OXALIS		
Acetosella,	wood sorrel;	called cuckoo sorrel; well known.
PARNASSIA		
Palustris,	grass of parnassus;	already mentioned. See the engraving.
PEDICULARIS		
Palustris,	marsh louse-wort;	in wet barren ground.
Sylvatica,	common louse-wort;	in dry barren ground.
PHLEUM		
Pratense,	cat's-tail grass;	called timothy grass; an excellent species; in meadows.
Nodosum,	bulbous cat's-tail grass;	less than the former; called provincially lobbin grass.
PINGUICULA		
Vulgaris,	butterwort;	in gardens; in the best arable fields of Tyr-corrin; common.
PLANTAGO,	Plantain;	there are six varieties of this in the demesne of Downhill; the great plantain makes a useful salve.
POA		
Trivialis,	common poa grass;	very common.

Botanic Names.	*Common Names.*	*Observations.*
POA		
Pratensis,	great poa;	a luxuriant grass.
Annua,	annual poa;	in the sheep walks of Spring-hill; in dry meadows.
Retroflexa,	retroflex poa;	in dry or shady places; common.
Compressa,	creeping poa;	
Nemoralis,	wood poa;	
POLYGALA		
Vulgaris,	milk-wort;	three varieties, blue, red, and white, in our high pastures.
POLYGONUM		
Amphibium,	perennial arsmart;	in gardens, dunghills, and rich wastes; common; a weed.
Persicaria,	spotted arsmart;	in wastes, dunghills, &c.
Aviculare,	knot-grass;	in fields; all these plants abound in seeds eaten by poultry; the buck wheat is a variety.
POLYPODIUM,	Polypody;	a cryptogam; on walls; shady places; many varieties.
POTENTILLA,		
Anserina,	silver weed;	on dry pastures, meadows, &c.
PRIMULA		
Vulgaris,	primrose;	well known; in dry ditches, &c.
Veris,	cowslip;	in meadows.
PRUNELLA		
Vulgaris,	self-heal;	called by the Irish *kenned-duigh-hacket*; esteemed medicinal.

PTERIS

Botanic Names.	*Common Names.*	*Observations.*
PTERIS		
Aquilina,	brake;	in sandy lands and elsewhere; common.
RANUNCULUS		
Flammula,	crowfoot;	called also cow-grass; cows eat it greedily.
Lingua,	spearwort;	corruptly called sparrow-weed; in wet pastures and ditches.
Ficaria,	pilewort;	in meadows.
Repens,	creeping crowfoot;	very common; there are several varieties.
Bulbosus,	buttercup;	an early bite; the butter made yellow where it abounds.
Sceleratus,	marsh crowfoot;	it blisters. Is this the plant, which impostors use to disfigure their limbs?
RAPHANUS		
Raphanistrum,	bastard radish;	a troublesome weed; in light grounds.
RHINANTHUS		
Cristagalli,	yellow rattle;	abounds in the meadows of Aghanloo and eleswhere; an useless plant.
RUMEX		
Maritimus,	sea-dock;	in dunghills, wastes, &c.

* Dr. Withering says, that the distilled water of this will cause immediate vomiting, and is therefore useful in cases of poison. Ought not every apothecary to be furnished with this?

Botanic Names.	*Common Names.*	*Observations.*
RUMEX		
Acutus,	sharp pointed dock;	in woods; not common; an Indian cure for the cancer.
Crispus,	curled dock;	in fields; too common.
Acetosa,	sorrel;	well known.
Acetosella;	sheep sorrel;	less than the former; in bogs, &c.
SAMBUCUS		
Nigra,	elder;	in hedges; it grows in dry and exposed situations; it would be a good nurse from the north-west; a branch of it on cabbages is said to drive away insects; it is said also, that no blight will affect corn near an elder plant; the young shoots cure the rot in sheep; the flowers kill turkies; the berries kill poultry.
Ebulus,	dwarf elder;	in hedges, rank grounds, near walls, &c.
SAPONARIA		
Officinalis,	soap-wort;	in dry ditches; rare.
SAXIFRAGA		
Hipnoides,	moss saxifrage;	on high grounds; there are other varieties.
SCABIOSA		
Succisa,	devil's bit;	in moist meadows and pastures.

Botanic Names.	*Common Names.*	*Observations.*
SCABIOSA		
Arvensis,	field scabious;	in corn fields.
SCHOENUS		
Nigricans,	black bog-rush;	in wet grounds.
SCIRPUS		
Palustris,	club-rush;	in wet ditches; in the old Roe.
Caespitosus,	dwarf club-rush;	in wet grounds; on the mountains.
Lacustris,	bull-rush;	in slow rivers; not common.
Maritimus,	bastard cyprus;	in wet grounds near rivers, or the sea.
Sylvaticus,	millet cyprus;	in marshes.
SCROPHULARIA		
Nodosa,	fig-wort;	in hedges, near woods, &c. the decoction cures the mange in swine.
SEDUM		
Anglicum,	English sedum;	on the top of Knock-leighrim.
SIUM		
Angustifolium,	water parsnip;	a plant of some powerful quality, not yet well ascertained; near streams.
SEMPERVIVUM		
Tectorum,	house-leek;	well known.
SENECIO		
Vulgaris,	groundsel;	a weed in gardens, &c.
Jacobæa,	rag-wort;	provincially, benweed, well known;

Botanic Names.	*Common Names.*	*Observations.*
		known; a dye-stuff; there are varieties.
SERRATULA		
Arvensis,	way thistle;	on the sides of roads and fields; too common.
Alpina,	mountain saw-wort;	on the high grounds about Ballyhacket.
SONCHUS		
Arvensis,	corn sow-thistle;	in fields often under crops. I found the white milk of these plants inspissated to yield a gum.
Oleraceus,	common sow-thistle;	
SPIRÆA		
Ulmaria,	meadow sweet;	well known.
SPERGULA		
Pentandria,	spurrey,	in my farm a weed; it seems to abound in gum.
Arvensis,	corn spurrey;	in corn fields; a weed.
STELLARIA		
Graminea,	least stitch-wort;	in Mr. Acheson's farm, &c.
SYMPHYTUM		
Officinale,	comfrey;	in the garden of Streeve, &c. the young stems a dainty, when boiled.
TANACETUM		
Vulgare,	yellow tansey:	on the embankments of the Roe; on the sandy ditches

in

Botanic Names.	*Common Names.*	*Observations.*
		in Drumbane, &c. Flesh-meat, rubbed with the juice of it, will not be touched by the flies. I rubbed my horse's head with the oil in summer, and the flies would not light on him.
THLASPI		
Campestre,	mithridate mustard;	a weed in corn fields.
Bursa-pastoris,	shepherd's-purse;	on the road-side near Newtownlimavady; elsewhere very common.
TREMELLA	tremella;	vulgarly called jelly, or fallen star; in reality a cryptogam; on high pastures after rain.
TORMENTILLA		
Erecta,	tormentil;	on the sides of fields.
Reptans,	creeping tormentil;	on mountain bogs.—Both used by the ancient Irish to tan leather; a bitter and astringent.
TRIFOLIUM		
Repens,	white clover;	in kindly pastures; native.
Scabrum,	rough trefoil;	above the limestone in Ballybristal.
Alpestre,	long leaved trefoil;	among the fallen rocks of Benyevenagh; there are other varieties.

Botanic Names.	*Common Names.*	*Observations.*
TRIGLOCHIN		
Palustre,	arrow-headed grass;	in wet ground.
Maritimum,	sea arrow-headed grass;	near the coast.
TUSSILAGO		
Petasites,	butter-bur;	or great colts-foot.
Farfara,	colts-foot;	this, with the former, are pernicious weeds; they are best destroyed by cutting the flower stems in April.
VERONICA		
Maritima,	sea speedwell;	there are two or three varieties near the coast.
Spicata,	upright speedwell;	in the meadows of Aghanloo.
Officinalis,	male speedwell;	in waste grounds, common; a substitute for tea.
Serpyllifolia,	smooth speedwell;	frequent in pastures.
Beccabunga,	brooklime;	in streams, common; an early sallad.
Anagallis,	long-leaved speedwell;	in water; there are other varieties.
VICIA		
Sylvatica,	wood vetch;	in hedges, common.—Cattle eat both.
Cracca,	tufted vetch;	
Sativa,	tare;	in corn fields; worthy of culture.

Sepium,

Botanic Names.	*Common Names.*	*Observations.*
Sepium,	bush-vetch;	in thickets, hedges, worthy of culture.
VIOLA		
Canina,	dog's-violet;	in grounds often ploughed, in pastures, wastes, &c.
Odorata,	sweet violet;	under hedges, bushes, &c.
Tricolor,	pansy;	or heart's ease, or three faces under a hood; every where.
URTICA		
Urens,	stinging nettle;	on the sides of roads, ditches, wastes; too well known.
ZOSTERA		
Marina,	grass-wrack;	on the shallow beach. Is this the Barnacle grass?

TREES AND SHRUBS.

Botanic Names.	*Common Names.*	*Observations.*
BETULA		
Alba,	birch;	very common; the inner bark a substitute for paper.
Alnus,	Alder;	in mountainous glens, common; transplanted into low grounds, becomes a fine tree; would be both useful and ornamental in hedge-rows through the marshy soils.

Botanic Names.	*Common Names.*	*Observations.*
BETULA		
Nania,	dwarf alder;	on high mountains; rare.
CORNUS		
Sanguinea,	dog-berry;	in Tyrcorrin, and elsewhere.
CORYLUS		
Avellana,	hasel;	in wooded banks, common.
CRATÆGUS		
Oxyacanthus,	hawthorn;	well known; is native, in mountains.
FAGUS		
Sylvatica,	beech;	in plantations. I am not sure, if native; the castanea, or chestnut, is not.
FRAXINUS		
Excelsior,	ash;	well known; should not be planted too near corn fields on account of its horizontal roots.
GENISTA		
Anglica,	needle furze, or little whin;	from this *planta genista*, came the royal name of *Plantagenet*.
HEDERA		
Helix,	ivy;	well known.
ILEX		
Aquifolium,	holly;	well known.
JUNIPERUS		
Communis,	juniper;	at Bally-gaylagh, on the coast.
MYRICA		
Gale,	sweet gale;	on bogs, extremely aromatic, called by some, Dutch myrtle;

Botanic Names.	*Common Names.*	*Observations.*
		tle; it is a dye-stuff; banishes fleas, and cures bots in horses.
PINUS		
Sylvestris,	Scotch fir;	is this the fossil wood of our bogs and wastes?
PRUNUS		
Spinosa,	black thorn or sloe;	in mountainous copses, &c. common; a dye-stuff.
PYRUS		
Malus,	crab tree;	in the hedges of Myroe; is it native?
QUERCUS		
Robur,	oak;	at present native; but how long, undestroyed, will it be permitted to remain???
ROSA		
Arvensis canina,	white and red dog-rose;	called, provincially, bucky briar.
Spinosissima,	burnet rose, whire and red;	on high rocky wastes; on the sandy warrens of Magilligan.
RUBUS		
Idaeus,	raspberry;	in copses, &c.; common.
Fruticosus,	bramble;	called black-berry bush.
SALIX		
Fragilis,	crack willow;	so called from the brittle quality of its young branches, a large tree; is it native?

SALIX

Botanic Names.	*Common Names.*	*Observations.*
SALIX		
Herbacea,	mountain dwarf willow;	on bare pastures, near Down-hill, and elsewhere.
Reticulata,	oval-leaved mountain willow;	common, near streams in mountains; would not this be a good nurse for your plantations? the bark is very bitter; is a substitute for Jesuits bark as well as the fusca.
Arenaria,	sand willow;	on the warrens of Magilligan.
Caprea,	common sallow;	a hardy plant. In the glen of Down-hill it flourished, when all other trees were killed by the north-western blast. Is not this a good hint to planters? There are other varieties, but, I believe, not native.
SORBUS		
Aucuparia,	quicken, or mountain ash;	In Irish, "*Caorran*;" in Scottish, *Rowan*. Is this name derived from the similitude of its berries to the pea, provincially *Rowan*, of a fish? A hardy tree, and would be a good nurse for mountain plantations.

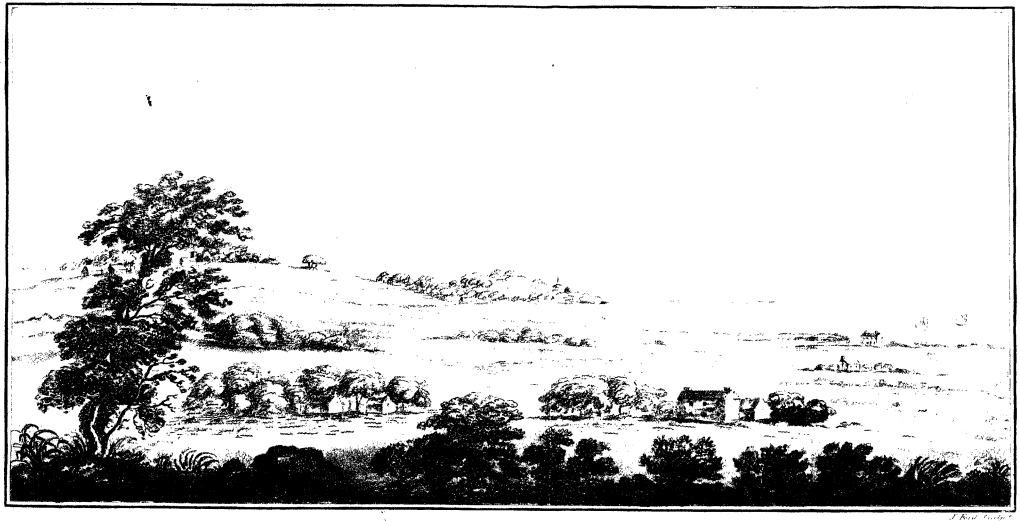
SPARTIUM

Botanic Names.	*Common Names.*	*Observations.*
SPARTIUM		
Scoparium,	broom;	in sandy lands, wastes, &c.; cattle eat it; it cures the rot in sheep.
TAXUS		
Baccata,	yew;	fossil in Magilligan; I believe not at present a native of this county.
VACCINIUM		
Vitis idæa,	wortle-berry;	in dry banks of mountains, glens, &c.
Uliginosum,	bilberry;	in woods, rocks, &c.; there are other varieties.
ULEX		
Europæus,	greater whin, or gorse;	on heaths, ditches, &c. This was the principal food of horses and cattle in the dearths of 1789 and 1800. Cows died frequently of the big-gall, in the subsequent pasture season. Having observed a quantity to ferment in my cart, after being pounded, I found that they evolved a saccharine matter. I afterwards had some very imperfectly treated, in a process for distillation; and am

Botanic Name.	*Common Names.*	*Observations.*
		of opinion, that a spirit might be extracted from this plant.
ULMUS		
Campestris,	elm;	is this native?
Montana,	wych elm;	a hardier tree; the former generally engrafted on this.

This catalogue is imperfect; out of 417 plants, classed in my *hortus siccus*, I select these. This county affords much greater variety; but a botanist of only two campaigns, far removed from any coadjutor, should write with reserve.

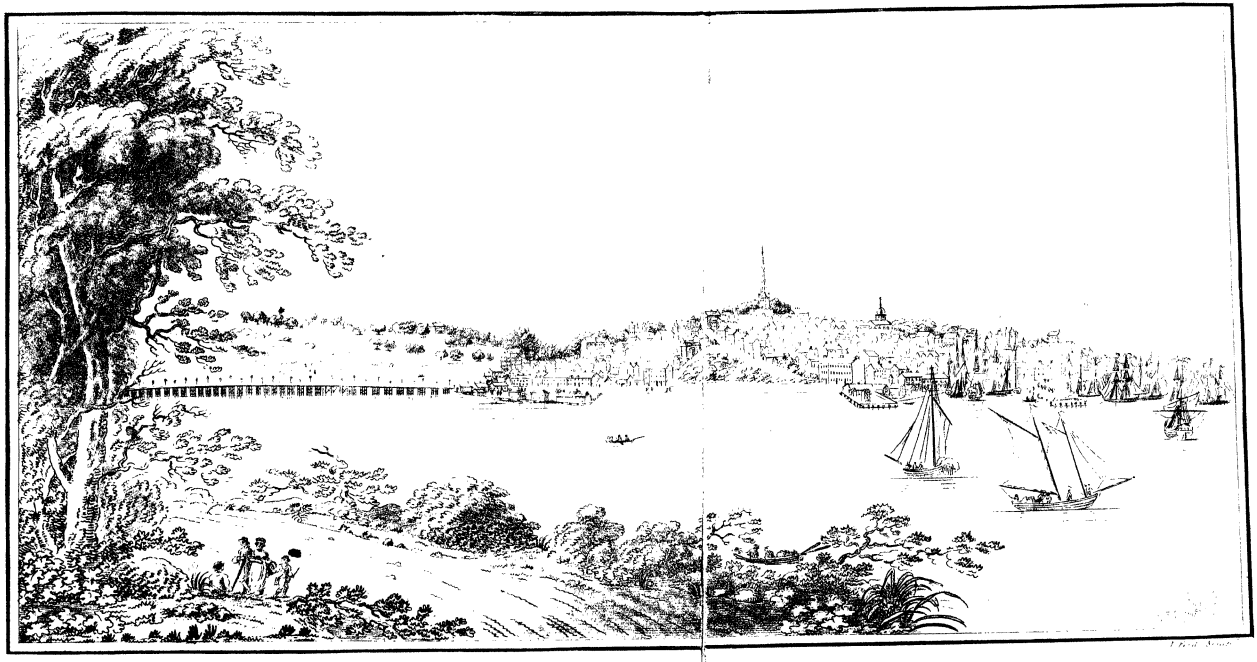
VIEW of BEN YEVENAGH and the SURJACENT COUNTRY.



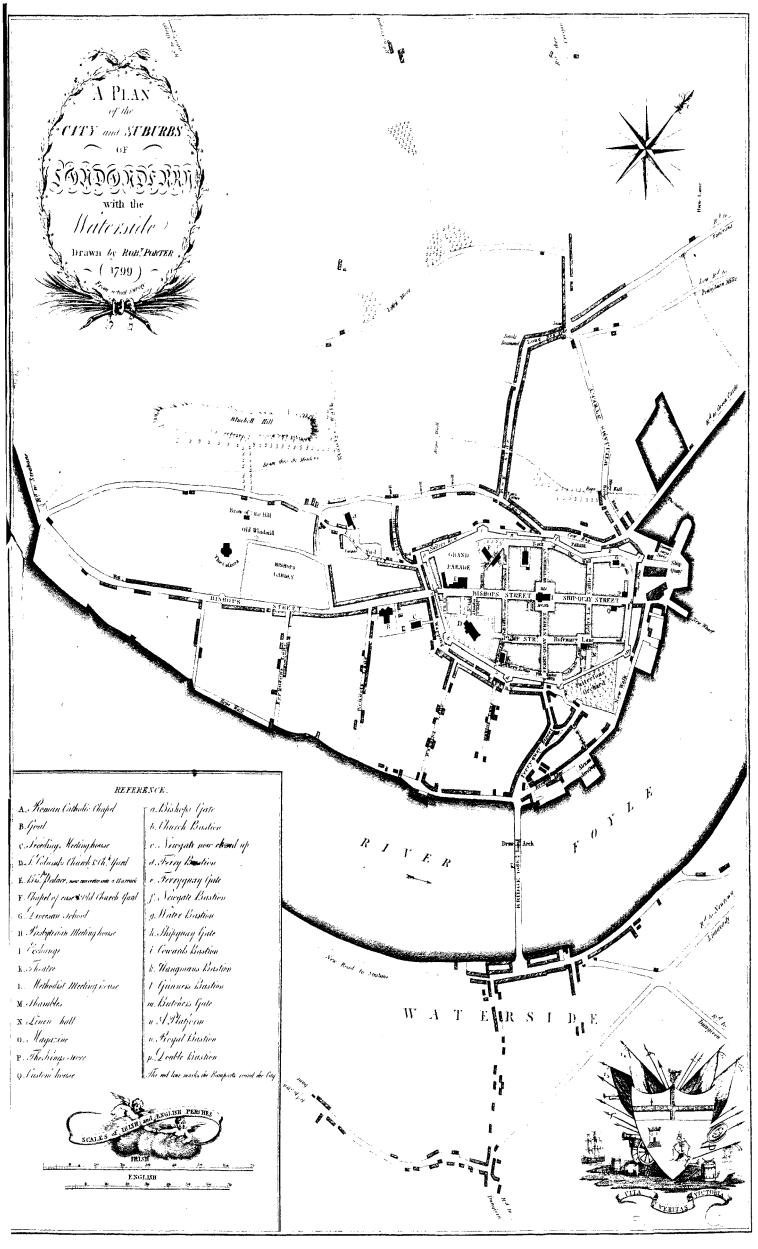
VIEW of the SCHISTOSE RIDGE which separates the VALLEY of the FOYLE from that of the FAHAN.

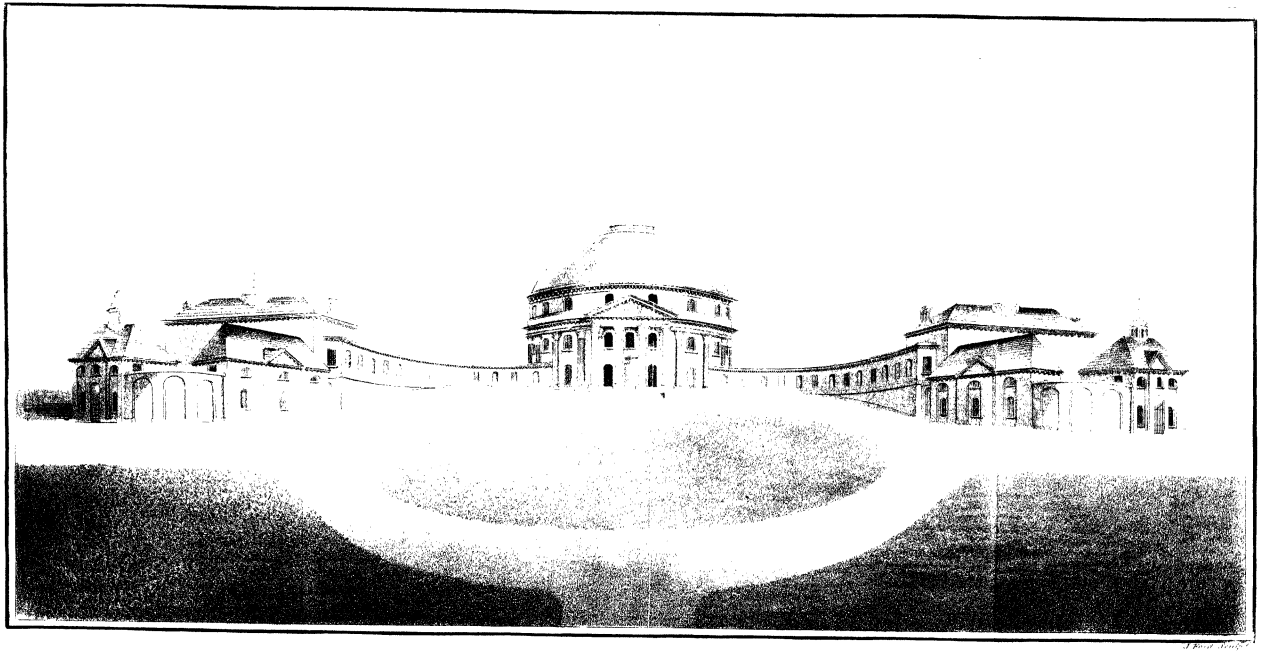
VIEW of the Succession of BASALTIC PROMONTORIES with a distant Prospect of the SCHIST MOUNTAINS from AGHANLOD point DUNGIVEN.

VIEW of the STRATIFIED & FALLEN ROCKS of BEN-YEVENAGH.

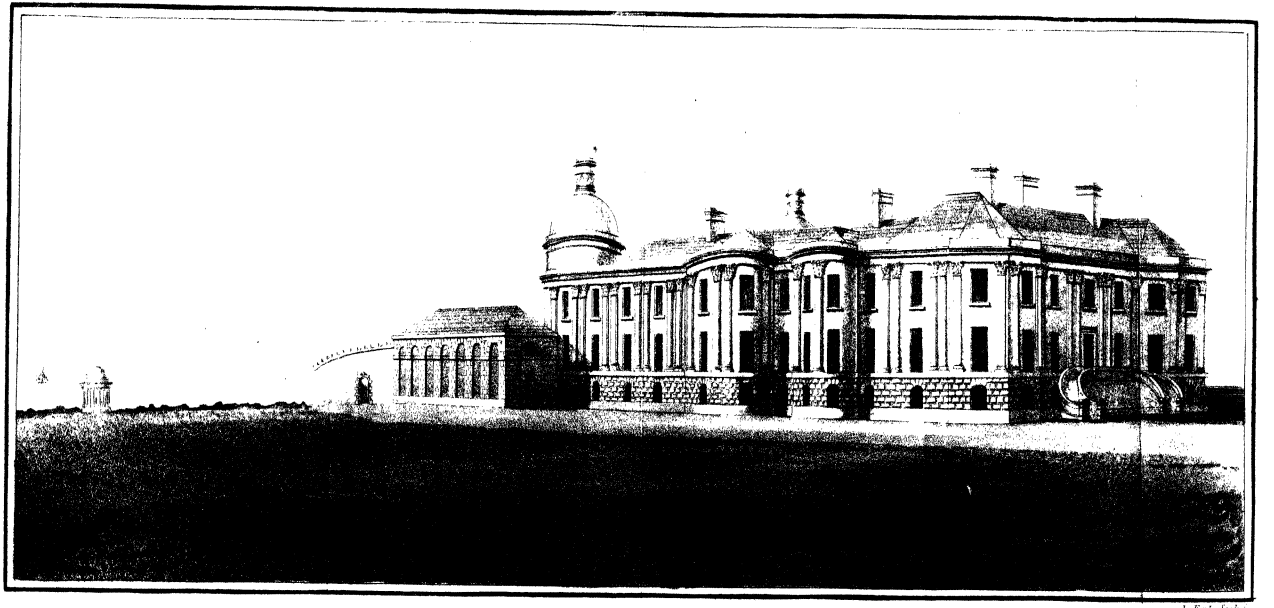


VIEW of LONDONDERRY.


A PLAN
of the
CITY and SUBURBS
OF
LONDONDERRY
with the
Waterside
Drawn by Robt. Porter
(1799)
REFERENCE.
A. Roman Catholic Chapel
B. Quaker
C. Presbyt. Meeting house
D. Episcopal Church & Ch. Yard
E. Ch. Presbyt. now used as a Church
F. Chapel of ease & Old Church Yard
G. Diocesan School
H. Independent Meeting house
I. Exchange
K. Theatre
L. Methodist Meeting house
M. Shambles
N. Linen hall
O. Magazine
P. Thatching store
Q. Custom house
a. Bishops Gate
b. Church Bastion
c. Navigate now closed up
d. Ferry Bastion
e. Ferrypway Gate
f. Navigate Bastion
g. Water Bastion
h. Shipquay Gate
i. Cowards Bastion
k. Mangonans Bastion
l. Gunners Bastion
m. Butchers Gate
n. A Platform
o. Royal Bastion
p. Double Bastion
The red line marks the Ramparts round the City
SCALE of IRISH and ENGLISH PERCHES
IRISH
ENGLISH
GRAND PARADE
BISHOPS STREET
SHIPQUAY STREET
BISHOPS STREET
Bishops Lane
Bishops Gate
Old Windmill
Blackhall Hill
Drum of the Hill
Drum Lock
RIVER FOYLE
WATERSIDE
New Road to Strabane
VIA VERITAS VICTORIA



VIEW OF BALLYSCULLION.



J. Ford Sculp.

S. WEST VIEW of DOWN HILL.

DESCRIPTION OF THE TOWN, &c.

a Double bastion,
b Royal bastion,
c Platform,
d Hangman's bastion,
e Gunners' ditto,
f Coward's ditto,
g Water ditto,
h Newgate ditto,
i Ferry ditto,
k Church ditto,
l Church-yard ditto,
m Diamond,
n Queen-street,
o Silver-street,
p Gracious-street,
q School-lane,
r Butchers'-street,
s House of Correction,
t Pump-street,
u Bishop's-house,
x Ravilin,
y Old Church-yard,
z Wapping,
A An old work made in the last wars,
B Foundation of cathedral, or long tower,
C Small redoubt,
D Cow market,
E Columb-kil's three wells, from which the besieged got water,
F A work made by the besieged, lest they should be forced out of the trenches at the windmill.

DESCRIPTION OF THE ENEMY'S CAMP.

No.		
	1	An old Danish fort,
	2	A fort,
	3	A trench,
	4	A platform of three mortars,
	5 & 6	Two batteries,
	7	A battery of two guns,
	8	A trench, with small shot,
	9	A line of approach,
	10	A guard-house,
	11	Ditch of the orchard,
	12	Small ditch,
	13	Last line of approach,
	14	A ditch made across the strand,
	15 & 16	Places where they kept advanced guards,
No.	17, 18, & 19,	Three batteries to defend the boom.

It was between No. 17 & 18 that Captain Brownrigg's ship, after breaking the boom, ran on shore; but the tide coming in, and firing her chace guns, she got off safe. Here, also, Captain Brownrigg lost his life by a small shot in the head.

The boom was a float of timber, with iron sockets at the end of each piece, and so buckled together; it was about 200 yards long, and five or six feet broad, lashed about with small cables, and spiked through.

a, a. Ditches lined with small shot.

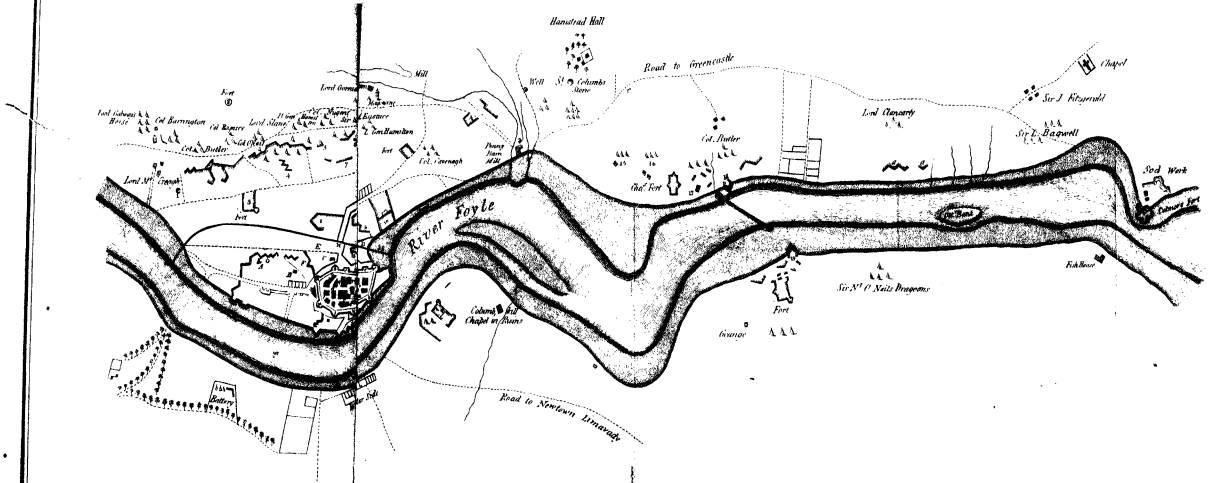
NAMES OF SOME OF THE MOST DISTINGUISHED PERSONAGES AT THE SIEGE OF LONDONDERRY, Anno 1688.

Lord Mountjoy,
George Phillips,
Lord Massareen,
Lord Blaney,
Lord Kingston,
Gustavus Hamilton,
William Cunningham,
George Canning,
—— Chichester,*
J. Murray,
Henry Baker,
Rev. George Walker,
Colonel Mouro,
Colonel Hamil,
Colonel Mitchelburn,
John Campsie,
Samuel Norman,
—— Ponsonby,

* Sir Arthur Rawdon.

* Ancestor to the gallant and patriotic Earl of Moira. "Sir Arthur Rawdon, by continual fatigue, cast himself into a dangerous illness: *A gentleman, who, in all those affairs of the north of Ireland, shewed himself a true lover and friend of his country, by his extraordinary zeal and courage, his great expences and indefatigable diligence in the defence of it.*"

Mackenzie's Narrative, p. 27.

Map of London Derry as besieged in 1688.

taken at the time by Captain Francis Neville.